

SLV-E130: AE1, AE2/E177EG/E180: EE, EG/E230: AE, CP, EY, UY, VP1, VP2/E285: B, VC/E295: CP, UX, VC1, VC2/E380: EE, EG/E430: AE, B, CP, VC, VP/E477EG/E480: EE, EG/E530: B, CP, UX, VC
RMT-V220/V220B/V221/V221A/V221B/V221C/V221D/V221E/V222/V222A/V222B

SERVICE MANUAL



Photo: SLV-E530

S MECHANISM

VIDEOplus+

- Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS VI for MECHANICAL ADJUSTMENTS. (9-921-647-11)

AEP Model

SLV-E130AE1/E130AE2/E230AE/E430AE

French Model

SLV-E285B/E430B/E530B

Spanish Model

SLV-E230CP/E295CP/E430CP/E530CP

East European Model

SLV-E180EE/E380EE/E480EE

Middle European Model

SLV-E177EG/E180EG/E380EG/
E477EG/E480EG

Irish Model

SLV-E230EY

UK Model

SLV-E230UY/E295UX/E530UX

German Model

SLV-E230VP1/E230VP2/E285VC/E295VC1/
E295VC2/E430VC/E430VP/E530VC

* The abbreviations of E130, E177, E180, E230, E285, E295, E380, E430, E477, E480 and E530 contained in this service manual are indicated when these models are common to all their corresponding models as given below.

Abbreviated model name	E130	E177	E180	E230	E285	E295	E380	E430	E477	E480	E530
All model names SLV-	E130AE1 E130AE2	E177EG	E180EE E180EG	E230AE E230CP E230EY E230UY E230VP1 E230VP2	E285B E285VC	E295CP E295UX E295VC1 E295VC2	E380EE E380EG	E430AE E430B E430CP E430VC E430VP	E477EG	E480EE E480EG	E530B E530CP E530UX E530VC



VIDEO CASSETTE RECORDER



SONY

SPECIFICATIONS

System

Channel coverage

- SLV-E130/E230AE/E230CP/E230VP/
E285VC/E295CP/E295VC/E430AE/E430CP/
E430VC/E430VP/E530CP/E530VC:
PAL (B/G)
VHF E2 – E12
(VHF Italian channel A to H)
UHF E21 – E69
CATV S01 – S05, S1 – S20
HYPER S21 – S41
- SLV-E177/E180/E380/E477/E480:
PAL (D/K, B/G)
VHF R1 – R12, E2 – E12
UHF R21 – R69, E21 – E69
CATV S01 – S05, S1 – S20
HYPER S21 – S41
- SLV-E230EY:
PAL (I)
VHF A-J
UHF B21 – B69
CATV S01 – S05, S1 – S20
HYPER S21 – S41
- SLV-E230UY/E295UX/E530UX:
PAL (I)
UHF B21 – B69
- SLV-E285B/E430B/E530B:
PAL (B/G)
VHF E2 – E12
(VHF Italian channel A to H)
UHF E21 – E69
CATV S01 – S05, S1 – S20
HYPER S21 – S41
SECAM (L)
VHF F2 – F10
UHF F21 – F69
CATV B – Q
HYPER S21 – S41

RF output signal

UHF channels 21 – 69

Aerial out

75-ohms asymmetrical aerial socket

Inputs/outputs

- SLV-E130/E177/E180EG/E230EY/E230UY/
E380EG/E477/E480EG:
↳ LINE-1 (TV)
21-pin
Video input: pin 20
Audio input: pins 2 and 6
Video output: pin 19
Audio output: pins 1 and 3

- SLV-E180EE/E380EE/E480EE:

LINE-1 IN

VIDEO IN, phono jack (1)

Input signal: 1 Vp-p, 75 ohms,

unbalanced, sync negative

AUDIO IN, phono jack (1)

Input level: 327 mVrms

Input impedance: more than 47 kilohms

LINE-2 IN (SLV-E380EE)

VIDEO IN, phono jack (1)

Input signal: 1 Vp-p, 75 ohms,

unbalanced, sync negative

AUDIO IN, phono jack (1)

Input level: 327 mVrms

Input impedance: more than 47 kilohms

LINE OUT

VIDEO OUT, phono jack (1)

Output signal: 1 Vp-p, 75 ohms,

unbalanced, sync negative

AUDIO OUT, phono jack (1)

Standard output: 327 mVrms

Load impedance: 47 kilohms

Output impedance: less than 10 kilohms

- SLV-E230AE/E230CP/E230VP/E285VC/
E430AE/E430CP/E430VC/E430VP:

↳ LINE-1 (TV)

21-pin

Video input: pin 20

Audio input: pins 2 and 6

Video output: pin 19

Audio output: pins 1 and 3

DECODER/↺ LINE-2 IN (SLV-E230CP,
E285VC, E430VC/CP)

↳ LINE-2 (SLV-E430AE/VP)

21-pin

Video input: pin 20

Audio input: pins 2 and 6

- SLV-E285B/E430B:

↳ LINE-1 (TV)

21-pin

Video input: pin 20

Audio input: pins 2 and 6

Video output: pin 19

Audio output: pins 1 and 3

DECODER/↺ LINE-2 IN

21-pin

Video input: pin 20

Audio input: pins 2 and 6

- SLV-E295CP/E295VC/E530B/E530CP/
E530VC:

↳ LINE-1 (TV)

21-pin

Video input: pin 20

Audio input: pins 2 and 6

Video output: pin 19

Audio output: pins 1 and 3

DECODER/↺ LINE-3 IN

21-pin

Video input: pin 20

Audio input: pins 2 and 6

LINE-2 IN

VIDEO IN, phono jack (1)

Input signal: 1 Vp-p, 75 ohms,

unbalanced, sync negative

AUDIO IN, phono jack (1)

Input level: 327 mVrms

Input impedance: more than 47 kilohms

- SLV-E295UX/E530UX:

↳ LINE-1 (TV)

21-pin

Video input: pin 20

Audio input: pins 2 and 6

Video output: pin 19

Audio output: pins 1 and 3

↺ LINE-3 IN

21-pin

Video input: pin 20

Audio input: pins 2 and 6

LINE-2 IN

VIDEO IN, phono jack (1)

Input signal: 1 Vp-p, 75 ohms,

unbalanced, sync negative

AUDIO IN, phono jack (1)

Input level: 327 mVrms

Input impedance: more than 47 kilohms

General

Power requirements

220 – 240 V AC, 50 Hz

Power consumption

20W

Operating temperature

5 °C to 40 °C

Storage temperature

–20 °C to –60 °C

Dimensions

Approx. 355 × 96 × 285 mm (w/h/d)

including projecting parts and controls

Mass

Approx. 3.9 kg

Supplied accessories

Remote commander (1)

R6 (size AA) batteries (2)

Aerial cable (1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

• Feature Difference

SLV- FEATURE	E130AE1/ E130AE2	E177EG/ E180EG	E180EE	E230AE/ E230VP1/ E230VP2	E230CP	E230EY/ E230UY
4 Head VIDEO						
LP REC						O
NTSC (REC/PB)		X/O	X/O			
SECAM (REC/PB)						
ME-SECAM (REC/PB)		O/O	O/O			
LINE1 RCA or EUR	EUR	EUR	RCA	EUR	EUR	EUR
FRONT IN						
EUR IN (2nd)						
C+ (2nd)					O (SW, C+)	
RF OUT SYSTEM	G	K/G	K/G	G	G	I
CLICK SHUTTLE						
REMOTE COMMANDER RMT-	V220	V220	V220	V221	V221	V221A

SLV- FEATURE	E285B	E285VC	E295CP/ E295VC1/ E295VC2	E295UX	E380EE	E380EG
4 Head VIDEO						
LP REC			O	O		
NTSC (REC/PB)	X/O	X/O	X/O	X/O	X/O	X/O
SECAM (REC/PB)	O/O					
ME-SECAM (REC/PB)	X/O				O/O	O/O
LINE1 RCA or EUR	EUR	EUR	EUR	EUR	RCA	EUR
FRONT IN			O	O	O	
EUR IN (2nd)				O		
C+ (2nd)	O (SW, C+)	O (SW, C+)	O (SW, C+)			
RF OUT SYSTEM	L/G	G	G	I	K/G	K/G
CLICK SHUTTLE					O	O
REMOTE COMMANDER RMT-	V221B	V221	V222	V222A	V220	V221

SLV- FEATURE	E430AE/ E430VP	E430B	E430CP/ E430VC	E477EG	E480EE	E480EG	E530B	E530CP/ E530VC	E530UX
4 Head VIDEO	O	O	O	O	O	O	O	O	O
LP REC	O	O	O	O	O	O	O	O	O
NTSC (REC/PB)	X/O	X/O	X/O	X/O	X/O	X/O	X/O	X/O	X/O
SECAM (REC/PB)		O/O					O/O		
ME-SECAM (REC/PB)		X/O		O/O	O/O	O/O	X/O		
LINE1 RCA or EUR	EUR	EUR	EUR	EUR	RCA	EUR	EUR	EUR	EUR
FRONT IN							O	O	O
EUR IN (2nd)	O								O
C+ (2nd)		O (SW, C+)	O (SW, C+)				O (SW, C+)	O (SW, C+)	
RF OUT SYSTEM	G	L/G	G	K/G	K/G	K/G	L/G	G	I
CLICK SHUTTLE							O (JOG)	O (JOG)	O (JOG)
REMOTE COMMANDER RMT-	V221E	V221C	V221E	V221D	V220B	V221E	V222B	V222	V222A

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
Feature Difference		3	5.	INTERFACE, IC PIN FUNCTION DESCRIPTION	
SERVICE NOTE		5	5-1.	System Control-Video/RP Block Interface (MA-314 board IC161)	5-1
1. GENERAL			5-2.	System Control-Servo Peripheral Circuit Interface (MA-314 board IC161)	5-1
Getting Started	1-1		5-3.	System Control-Mechanism Interface (MA-314 board IC161)	5-2
Basic Operations	1-7		5-4.	System Control-System control Peripheral circuit Interface (MA-314 board IC161)	5-3
Additional Operations	1-11		5-5.	System Control-Audio Block Interface (MA-314 board IC161)	5-3
Additional Information	1-14		5-6.	Servo/System/Tuner/Timer Control Microprocessor Pin Function (MA-314 board IC161)	5-4
2. DISASSEMBLY			6.	ERROR CODE	6-1
2-1.	Upper Case Removal	2-1	7.	ADJUSTMENTS	
2-2.	Front Panel Removal	2-1	7-1.	Mechanical Adjustments	7-1
2-3.	Rear Panel Removal	2-1	7-2.	Electrical Adjustments	7-1
2-4.	DS-78, FI-14 Boards Removal	2-1	2-1.	Pre-Adjustment Preparations	7-1
2-5.	ETXNY 165E1D Block Removal	2-2	2-1-1.	Instruments to be Used	7-1
2-6.	Mechanism Deck Removal	2-2	2-1-2.	Connection	7-1
2-7.	MA-314 Board Removal	2-2	2-1-3.	Set-up of Adjustment	7-1
2-8.	Internal Views	2-3	2-1-4.	Alignment Tape	7-1
2-9.	Circuit Boards Location	2-4	2-1-5.	Specified I/O Level and Impedance	7-2
3. BLOCK DIAGRAMS			2-1-6.	Adjusting Sequence	7-2
3-1.	Overall Block Diagram	3-1	2-2.	Power Supply Adjustment	7-2
3-2.	Video Block Diagram	3-4	2-2-1.	Power Supply Check	7-2
3-3.	Servo/System Control Block Diagram	3-7	2-3.	Servo System Adjustment	7-3
3-4.	I/O, C+ Block Diagram	3-9	2-3-1.	Switching Position Adjustment	7-3
3-5.	Audio Block Diagram	3-11	2-4.	Video System Adjustment	7-3
3-6.	Tuner Block Diagram	3-12	2-4-1.	Playback Y signal Level Check	7-3
3-7.	Mode Control Block Diagram	3-15	2-4-2.	Recording Chroma Level Check	7-4
3-8.	Power Block Diagram	3-17	2-4-3.	Sync. AGC Check	7-4
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS			2-4-4.	X'tal Oscillation Frequency Check	7-4
4-1.	Frame Schematic Diagram	4-1	2-5.	Audio System Adjustment	7-5
4-2.	Printed Wiring Boards and Schematic Diagrams	4-4	2-5-1.	Normal Audio System Adjustment	7-5
MA-314 Printed Wiring Board	4-5		1.	ACE Head Adjustment	7-5
MA-314 (Head Amp) Schematic Diagram	4-7		2.	E-E Output Level Check	7-5
MA-314 (Secam) Schematic Diagram	4-11		3.	Recording Bias Adjustment	7-5
MA-314 (Video, Audio) Schematic Diagram	4-13		4.	Overall Level Characteristic and Distortion Factor Check	7-5
MA-314 (Servo/System Control) Schematic Diagram ..	4-18		5.	Overall S/N Check	7-5
MA-314 (FL Driver, OSD, VPS/PDC) Schematic Diagram	4-21		2-6.	Parts Arrangement Diagram for Adjustments	7-6
MA-314 (IO) Schematic Diagram	4-26		8.	REPAIR PARTS LIST	
MA-314 (Tuner) Schematic Diagram	4-29		8-1.	Exploded Views	8-1
MA-314 (Power Supply) Schematic Diagram	4-31		8-1-1.	Front Panel and Cabinet Assemblies	8-1
DS-78, FI-14 Printed Wiring Board and Schematic Diagram	4-33		8-1-2.	Chassis Assembly	8-3
ETXNY 165E1D Printed Wiring Board	4-35		8-1-3.	Mechanism Chassis Assembly (1)	8-4
ETXNY 165E1D Schematic Diagram	4-37		8-1-4.	Mechanism Chassis Assembly (2)	8-5
			8-1-5.	Mechanism Chassis Assembly (3)	8-6
			8-2.	Electrical Parts List	8-7

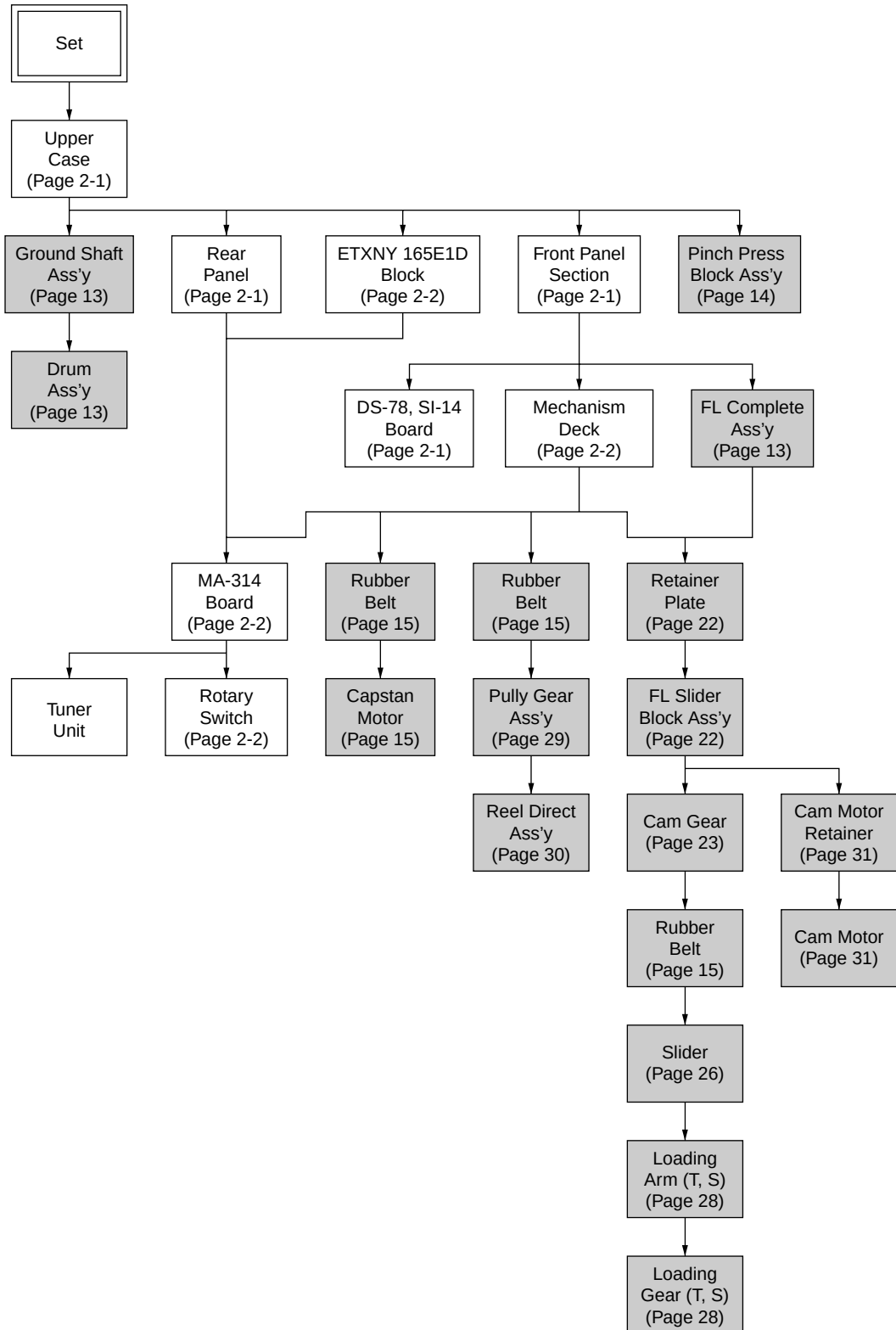
SERVICE NOTE

1. DISASSEMBLY

- This set can be disassembled in the order shown below.

Note: Pages in indicate pages in the SERVICE MANUAL.

Pages in indicate pages in the VHS MECHANICAL ADJUSTMENT MANUAL VI.



SECTION 1 GENERAL

This section is extracted from SLV-E530UX,
SLV-E295UX instruction manual.

Getting Started

Step 1

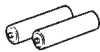
Unpacking

Check that you have received the following items with the VCR:

- Remote commander
- Aerial cable



- R6 (size AA) batteries



Checking your model name

The instructions in this manual are for the 2 models : SLV-E295UX, and E530UX. Check your model number by looking at the rear panel of your VCR. The SLV-E530UX is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "SLV-E530UX only."

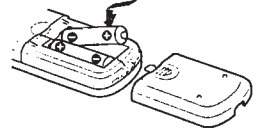
Step 2

Setting up the remote commander

Inserting the batteries

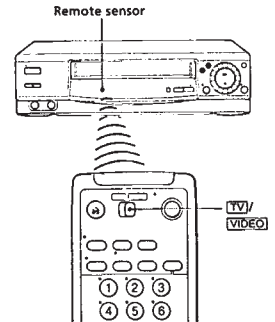
Insert two R6 (size AA) batteries by matching the + and - on the batteries to the diagram inside the battery compartment.

Insert the negative (-) end first, then push in and down until the positive (+) end clicks into the position.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.



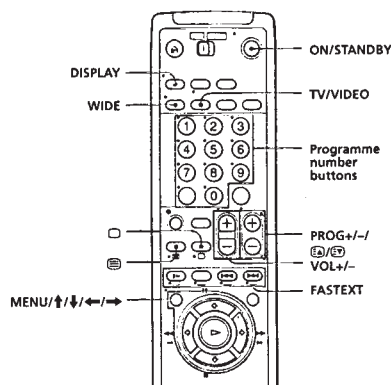
To operate	Set TV / VIDEO to
the VCR	VIDEO and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

continued

4 Getting Started

Getting Started 5

Step 2 : Setting up the remote commander (continued)



TV control buttons

To	Press
Turn the TV into standby or active mode	ON/STANDBY
Select an input source of the TV either from aerial in or from line in	TV/VIDEO
Select the programme position of the TV	Programme number buttons PROG +/-
Adjust the volume of the TV	VOL +/-
Switch to TV (Teletext off)	□ (TV)
Turn on the TV/switch to Teletext	⊞ (Teletext)
Use FASTEXT	FASTEXT buttons
Call up on-screen display	DISPLAY
Change the Teletext page	⊞/⊞
Operate TV menu options	MENU/UP/DOWN/LEFT/RIGHT
Switch the wide mode of a Sony wide TV	WIDE

Notes

- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.

- 1 Set **TV / VIDEO** at the top of the remote commander to **TV**.
 - 2 Hold down ON/STANDBY, and enter your TV's code number(s) using the programme number buttons. Then release ON/STANDBY.
- Now you can use the following TV control buttons to control your TV: ON/STANDBY, TV/VIDEO, programme number buttons, PROG +/-, VOL +/-, □ (TV), ⊞ (Teletext), FASTEXT buttons, WIDE, MENU, UP/DOWN/LEFT/RIGHT and OK with some TV.

Tip

- If you set your TV's code number correctly while the TV is turned on, the TV turns off automatically.

continued

6 Getting Started

Getting Started 7

Step 2 : Setting up the remote commander (continued)

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

To make wide mode settings, see the footnotes below this table for the applicable code numbers.

Manufacturer	Code number	Manufacturer	Code number
Sony	01 ^{*1} , 02 [*]	Philips	06 ^{*1} , 07 ^{*1} , 08 ^{*1}
Akai	68	Saba	12, 13
Ferguson	52	Samsung	22, 23
Grundig	10 ^{*1} , 11 ^{*1}	Sanyo	25
Hitachi	27 ^{*1} , 28 ^{*1} , 50 ^{*1} , 51 ^{*1}	Sharp	29
Mitsubishi	09	TEAC	67
NEC	66	Telefunken	36
Nokia	15, 16, 69 ^{*3}	Thomson	43 ^{*2}
Panasonic	17 ^{*1} , 49	Toshiba	38

^{*1} Press WIDE to switch the wide picture mode on or off.

^{*2} Press WIDE, then press VOL +/- to select the wide picture mode you want.

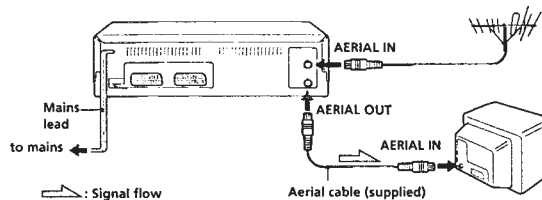
^{*3} Press WIDE. The menu appears on the TV screen. Then, press $\uparrow/\downarrow/\leftarrow/\rightarrow$ to select the wide picture you want and press OK.

Notes

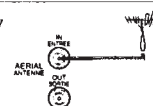
- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 01 (Sony). Reset the appropriate code number.

Step 3

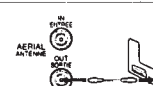
Connecting the VCR



- 1 Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.



- 2 Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.



- 3 Connect the mains lead to the mains.

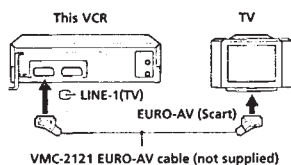
continued

Step 3 : Connecting the VCR (continued)

Additional connection

To a TV that has a EURO-AV (Scart) connector

This additional connection improves picture and sound quality. Connect the TV as shown on the right. Whenever you want to watch the VCR picture, press TV/VIDEO to display the VIDEO indicator in the display window.

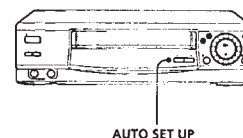


Note

- When you connect the VCR and your TV only with an aerial cable, you have to set RF MODULATOR in the OPTIONS menu to ON (initial setting). If the TV is connected to the LINE-1(TV) connector, setting RF MODULATOR in the OPTIONS menu to OFF is recommended. In the OFF position, only the signal from the aerial is output through the AERIAL OUT connector (see page 52).

Step 4

Setting up the VCR with the Auto Set Up function



Before using the VCR for the first time, set up the VCR using the Auto Set Up function. With this function, you can set TV channels, guided by the sequence indicated in the display window.



Hold down AUTO SET UP on the VCR for more than three seconds. The ATP (Auto Tuner Preset) function starts searching for all of the receivable channels and presets them with the guide channels for VIDEO Plus+ in the following order.

Station	Guide Channel
BBC1	1
BBC2	2
ITV	3
CH4	4
CH5	5

After the search is complete, the current time appears in the display window for any stations that transmit a time signal.



To cancel the Auto Set Up function
Press AUTO SET UP.

Tip

- If you want to change the language for the on-screen display from English, see page 19.

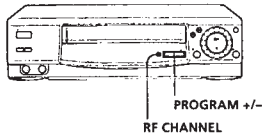
Note

- Do not cancel the Auto Set Up function during the ATP operations. If you do, repeat the step above.

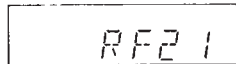
Step 5

Tuning your TV to the VCR

If you connect the VCR to your TV using the EURO-AV cable, skip this step.



- 1** **AUTO SET UP**
RF CHANNEL
Press RF CHANNEL on the VCR.
The RF channel appears in the display window.
The VCR signal is output through this channel to the TV.



- 2**
Turn on your TV and select a programme position for the VCR picture.
This programme position will now be referred to as the video channel.

- 3**
Tune the TV to the same channel as that shown in the display window so that the picture on the right appears on the TV screen.
Refer to your TV manual for tuning instructions.
If the picture does not appear clearly, see "To obtain a clear picture from the VCR" on page 13.

SONY VIDEO CASSETTE RECORDER

- 4** **AUTO SET UP**
RF CHANNEL
Press RF CHANNEL.
You have now tuned your TV to the VCR. Whenever you want to play a tape, set the TV to the video channel.

To check to see if the TV tuning is correct

Set the TV to the video channel and press PROGRAM +/- on the VCR. If the TV screen changes to a different programme each time you press PROGRAM +/-, the TV tuning is correct.

To obtain a clear picture from the VCR

If the picture does not appear clearly in step 3 above, go to step 4 to finish this procedure once. Then start from step 1. After pressing RF CHANNEL in step 1 to display the RF channel, press PROGRAM +/- so that another RF channel appears. Then tune the TV to the new RF channel until a clear picture appears.

Manual setup — Setting the clock

You must set the time and date on the VCR to use the timer recording features properly.

The Auto Clock Set function works only if a station in your area is broadcasting a time signal.

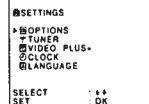
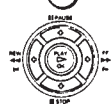
If the Auto Set Up function did not set the clock correctly for your local area, try another station for the Auto Clock Set function.

Before you start...

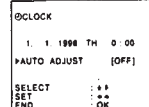
- Turn on the VCR and the TV.
- Set the TV to the video channel.

Setting the clock manually

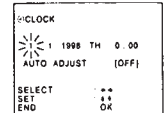
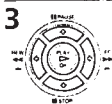
- 1** **MENU**
Press MENU, then press $\uparrow/\downarrow$ to select SETTINGS and press OK.



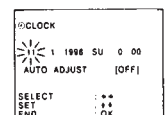
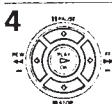
- 2**
Press $\uparrow/\downarrow$ to select CLOCK and press OK.



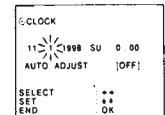
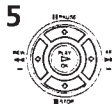
- 3**
Press $\uparrow/\downarrow$ to move the cursor ($\blacktriangleright$) to the clock row, then press $\rightarrow$.
The day starts flashing.



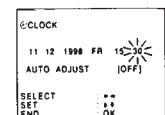
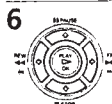
- 4**
Press $\uparrow/\downarrow$ to set the date.



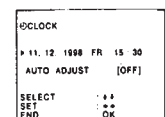
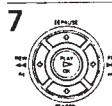
- 5**
Press $\rightarrow$ to flash the month and set the month using $\uparrow/\downarrow$.



- 6**
Set the year, hour, and minutes in sequence, using $\rightarrow$ to flash the item to be set, and press $\uparrow/\downarrow$ to select the digits.
The day of the week is set automatically.

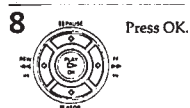


- 7**
Press $\rightarrow$ to start the clock.
The cursor ($\blacktriangleright$) appears at the beginning of the line.



continued

Manual setup — Setting the clock (continued)



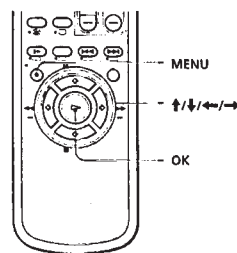
Tip

- To change the digits during setting, press $\leftarrow$ to return to the item to be changed, and select the digits using $\uparrow/\downarrow$.

Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Changing the station for the Auto Clock Set function

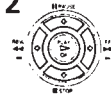


- 1 Press MENU, then press $\uparrow/\downarrow$ to select SETTINGS and press OK.



SETTINGS	
OPTIONS	
TUNER	
VIDEO PLUS	
CLOCK	
LANGUAGE	
SELECT	OK
SET	

- 2 Press $\uparrow/\downarrow$ to select CLOCK and press OK. The cursor (P) is on AUTO ADJUST.



CLOCK	
1 1 1998 TH 0 00	
AUTO ADJUST [OFF]	
SELECT	OK
SET	
END	

- 3 Press $\rightarrow$ to select ON.

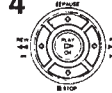


CLOCK	
11 12 1998 FR 15:30	
AUTO ADJUST [ON]	
CLOCK PROG [BBC1]	
SELECT	OK
SET	
END	

continued

Manual setup — Setting the clock (continued)

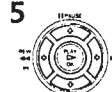
- 4 Press $\downarrow$ to move the cursor (P) to CLOCK PROG, then press $\leftarrow/\rightarrow$ repeatedly until the programme position of the station that carries the time signal appears.



If the VCR does not receive the time signal from any station, AUTO ADJUST returns to OFF automatically.

VIDEO PLUS	
PROG CH GUIDE CH	
BBC1 C21	11:15
BBC2 C12	12:15
ITV C33	1:15
CH4 C47	---
CH5 C55	---
SELECT	OK
SET	0-9
CANCEL	CLEAR

- 5 Press OK.



Tip

- If you set AUTO ADJUST to ON, the Auto Clock Set function is activated whenever the VCR is turned off. The date and time is adjusted automatically by making reference to the time signal from the station whose programme position is displayed in the "CLOCK PROG" row.

If you do not need the Auto Clock Set function, select OFF.

Note

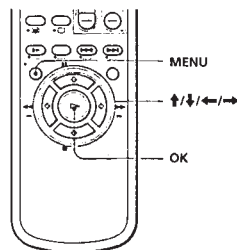
- The menu disappears automatically if you don't proceed for more than a few minutes.

Manual setup — Selecting a language

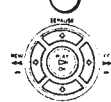
You can change the on-screen display language.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

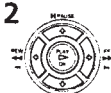


- 1 Press MENU, then press $\uparrow/\downarrow$ to select SETTINGS and press OK.



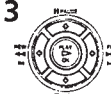
SETTINGS	
OPTIONS	
TUNER	
VIDEO PLUS	
CLOCK	
LANGUAGE	
SELECT	OK
SET	

- 2 Press $\uparrow/\downarrow$ to select LANGUAGE, then press OK.



LANGUAGE	
ENGLISH	NEDERLANDS
DEUTSCH	DANSK
FRANCAIS	SVENSKA
ITALIANO	SUOMI
ESPAÑOL	EI VINKKA
PORTUGUES	
SELECT	OK
SET	

- 3 Press $\uparrow/\downarrow/\leftarrow/\rightarrow$ to move the dot (●) to the desired language, then press OK.

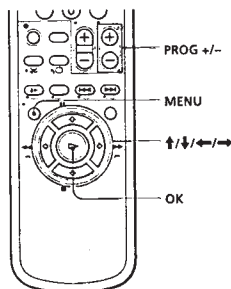


Manual setup — Presetting channels

If some channels could not be preset using the Auto Set Up function, you can preset them manually.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.



- 1 • MENU** Press MENU, then press $\uparrow/\downarrow$ to select **SETTINGS** and press OK.

SETTINGS	
• TUNER	
• VIDEO PLUS+	
• CLOCK	
• LANGUAGE	
SELECT	OK
- 2** Press $\uparrow/\downarrow$ to select **TUNER**, then press OK.

TUNER	PROG14
CHANNEL SET	(C23)
AFT FINE TUNING	(BBC1)
SELECT	OK
- 3** Press $\uparrow/\downarrow$ to move the cursor ($\rightarrow$) to **CHANNEL SET**.

TUNER	PROG14
CHANNEL SET	(C23)
AFT FINE TUNING	(BBC1)
SELECT	OK

- 4** Press PROG +/- to select the programme position.

TUNER	PROG1
CHANNEL SET	(C23)
AFT FINE TUNING	(BBC1)
SELECT	OK
- 5** Press $\leftarrow/\rightarrow$ repeatedly until the channel you want is displayed.

The channels appear in the following order:

 - UHF B21 - B69

If you know the number of the channel you want, press the programme number buttons. For example, for channel 5, first press "0" and then press "5."

TUNER	PROG 7
CHANNEL SET	(C41)
AFT FINE TUNING	(ITV)
SELECT	OK
- 6** To allocate another channel to another programme position, repeat steps 4 and 5.
- 7** Press OK.

Manual setup — Presetting channels (continued)

Disabling unwanted programme positions

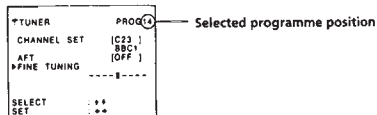
After presetting the channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/- buttons.

- In step 5 above, press programme number button "0" twice to display the number "00" beside CHANNEL SET.
- Press OK.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

- Press PROG +/- to select the programme position for which you cannot obtain a clear picture.
- Press MENU, then select **SETTINGS** and press OK.
- Select **TUNER** and press OK.
- Select **FINE TUNING**. The fine tuning meter appears.



- 5** Press $\leftarrow/\rightarrow$ to get a clearer picture, then press OK.

Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

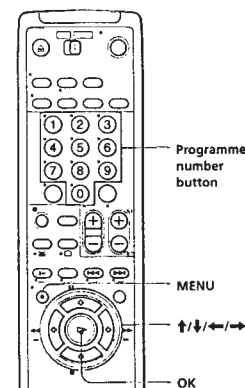
Manual setup — Setting up VIDEO Plus+

VIDEO Plus+ is a feature that simplifies programming the VCR to make timer recordings. To use VIDEO Plus+, each programme position needs to be matched with its VIDEO Plus+ guide channel. To get the guide channel numbers, see "Guide channels for VIDEO Plus+" on page 25, or look in the programme guide for your area that features PlusCode.

- If you want to record satellite broadcasts using VIDEO Plus+, see page 26.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.



- 1 • MENU** Press MENU, then press $\uparrow/\downarrow$ to select **SETTINGS** and press OK.

SETTINGS	
• TUNER	
• VIDEO PLUS+	
• CLOCK	
• LANGUAGE	
SELECT	OK
- 2** Press $\uparrow/\downarrow$ to select **VIDEO PLUS+** and press OK.

The preset channels are displayed on the screen. "—" in the GUIDE CH column means that the guide channel has not been preset.

VIDEO PLUS+	
PROG	CH
BBC1	C21
BBC2	C12
ITV	C33
CH4	C47
SELECT	OK
SET	0-9
CANCEL	CLEAR

continued

Manual setup — Setting up ShowView (continued)

3 Press $\uparrow/\downarrow$ to move the cursor ($\blacktriangleright$) to the row on which you want to set the guide channel.

To display other pages for programme positions 6 to 60, press $\uparrow/\downarrow$ repeatedly.

4 Press programme number buttons to enter the guide channel number assigned in the programme guide.

5 To set the guide channel of another station, repeat steps 3 to 4.

6 Press OK.

Guide channels for VIDEO Plus+

Guide channel	Station name	Guide channel	Station name
001	BBC1	125	BRAVO
002	BBC2		HSND
003	ITV		EBN
004	CHANNEL 4	126	CNN
005	CHANNEL 5	127	EURONEWS
006	RTE 1	128	PERFORMANCE
007	RTE 2		THE ARTS CHANNEL
008	TV NA GAELTACHTA	129	SKY MOVIES GOLD
101	SKY ONE		WEATHER
102	SKY NEWS	130	UK LIVING
103	SKY MOVIES		TELEVISION X FANTASY
104	THE MOVIE CHANNEL		CHANNEL
105	SKY SPORT	131	GRANADA +
106	NICKELODEON	132	GRANADA TALK
	PARAMOUNT CHANNEL	132	SKY SCOTTISH
107	EUROSPORT	133	TV5 EUROPE
	QUANTOM TV	134	TVE INTERNATIONAL
108	WARNER BROTHERS	135	MBC
109	MTV EUROPE		ARABIC
110	CHILDREN'S CHANNEL	136	QVC
	THE FAMILY CHANNEL	137	SPORTNET
111	THE DISNEY CHANNEL	138	COUNTRY MUSIC TV
112	BBC WORLD SERVICE		JAPANESE TV
113	RTL 4	140	SKY SPORT 2 & SOAPS &
114	FILMNET 2		TRAVEL & HIST & SF
	SUPER SPORT	141	TV ASIA
	ADULT CHAN	142	GRANADA GOOD LIFE
115	RTL PLUS INTERNATIONAL	142	GRANADA TV HIGH STREET
116	SAT 1	142	GRANADA FOOD + WINE
117	PREMIERE	142	GRANADA HEALTH AND
118	3 SAT		BEAUTY
119	SKY 2	142	GRANADA HOME + GARDEN
119	FOX KIDS	143	LIVE TV
120	PRO 7	144	SUPERCANNEL
121	TELE 5	145	VIDEO HITS ONE
122	TELECLUB		VH-1 (ENGLISH)
123	UK GOLD	146	SELECT TV
124	TLC	147	FILMNET 1 (24 HOUR)
	DISCOVERY	148	SKY SPORT 3
	REGAL SHOP	149	PLAYBOY TV
			TNT
			CARTOON NETWORK

Note

- The guide channel codes listed above are as of 20 February 1997. If you have any questions about the guide channels, please consult your nearest Sony service facility or the marketing group of Sony UK.

continued

Manual setup — Setting up ShowView (continued)

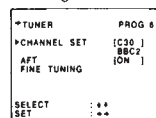
Setting up VIDEO Plus+ for satellite broadcasts

When your satellite tuner is connected via the AERIAL IN connector, first you have to set the programme position for each satellite channel using the TUNER menu. Then set the guide channel number for each satellite channel using the VIDEO Plus+ menu.

If your satellite tuner is connected via the LINE-1(TV) connector, you don't have to set programme positions nor guide channel numbers for satellite channels. Skip the following procedure.

- Turn on the satellite tuner.
- Press MENU, then select SETTINGS and press OK.
- Select TUNER and press OK.
- Press PROG +/- to select a programme position you want to use for watching a satellite channel.
- Select CHANNEL SET, then press $\leftarrow/\rightarrow$ repeatedly to tune the VCR to the satellite tuner.

The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.



- Press PROG +/- to select another programme position for the next satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step 5.
- Repeat this step for all satellite channels.
- Set the guide channel number for each programme position assigned to the satellite channel, following the procedures on pages 23 and 24.

Notes

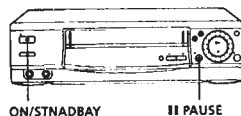
- The menu disappears automatically if you don't proceed for more than a few minutes.
- If you use a satellite tuner connected via the LINE-1 (TV) connector, you don't have to set up VIDEO Plus+. Just record a satellite programme using VIDEO Plus+, and the VCR automatically records the programme from the LINE-1 (TV) connector.
- If you inadvertently entered a guide channel number, press CLEAR.
- The VCR does not allow entering the guide channel number if the same number has been set.
- When you record a satellite broadcast using VIDEO Plus+, you need to select the desired channel on the satellite tuner manually.

Setting your personal code

For identification, you can enter a personal code into the VCR. Once you enter your personal code, you can confirm it any time but can never change it.

Before you start...

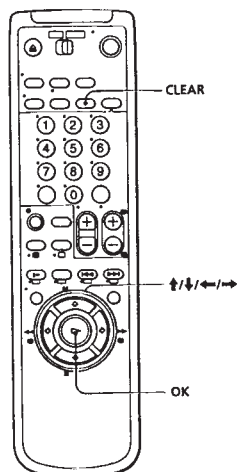
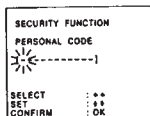
- Turn on the TV.
- Set the TV to the video channel.
- If there is a tape in the VCR, remove it.
- Turn off the VCR.



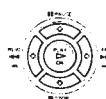
1



Hold down **PAUSE** and **ON/STANDBY** on the VCR simultaneously for more than three seconds.



2



Enter your personal code.

1 Press **UP** to select a character. Each time you press **UP**, the character changes as shown below.

A → B → ... → Z → 0 → 1 → ... → 9 → (blank space) → - (hyphen) → A

2 Press **RIGHT** to set the next character.

The next space flashes.

To correct a character, press **LEFT** until the character you want to correct flashes, then reset it.

You can set up to 11 characters for your personal code.

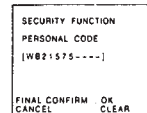


3

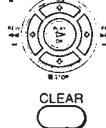


Press **OK**.

A confirmation screen appears.



4



If the displayed personal code is correct, press **OK**.

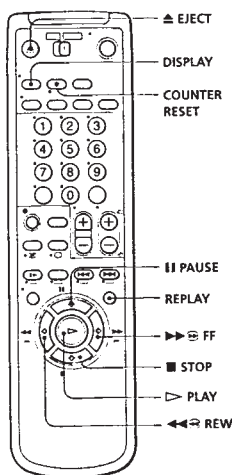
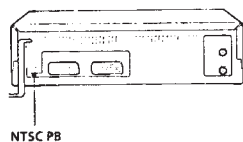
If the displayed personal code is wrong, press **CLEAR** and continue from step 2.

To confirm your personal ID

While the VCR is turned off and there is no tape in the VCR, hold down **PAUSE** and **ON/STANDBY** on the VCR simultaneously for more than three seconds. The entered personal code appears on the TV screen. Press any button to enter normal viewing mode.

Basic Operations

Playing a tape



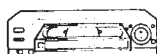
1

Turn on your TV and set it to the video channel.

2

Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.



3



Press **PLAY**.

When the tape reaches the end, it will rewind automatically.

Additional tasks

To	Press
Stop play	STOP
Pause play	PAUSE
Resume play after pause	PAUSE or PLAY
Fast-forward the tape	FF during stop
Rewind the tape	REW during stop
Eject the tape	EJECT

To replay a recently watched scene

You can immediately rewind and playback the scene you want to watch again.

During playback, press **REPLAY** up to four times. The VCR rewinds the tape about 10 seconds on the counter for each press of the button, and restarts playback.

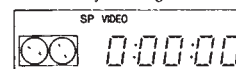
To play an NTSC-recorded tape

Set NTSC PB at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL only	ON PAL TV
PAL and NTSC	NTSC 4.43

To use the time counter

At the point on the tape that you want to find later, press **COUNTER RESET**. The counter in the display window resets to "0:00:00." Search for the point afterwards by referring to the counter.



To display the counter on the TV screen, press **DISPLAY**.

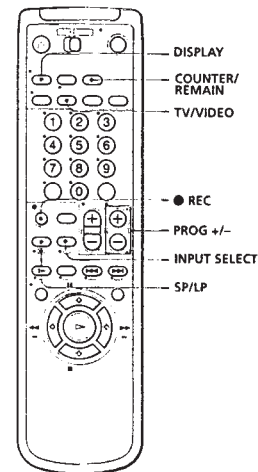
continued

Playing a tape (continued)

Notes

- The counter resets to "0:00:00" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- When you play back the tape recorded with the NTSC colour system, the counter does not appear on the TV screen.
- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
 - The picture becomes black and white.
 - The picture shakes.
 - No picture appears on the TV screen.
 - Black streaks appear horizontally on the TV screen.
 - The colour density increases or decreases.
 - Deterioration of the picture quality may occur.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This is due to the difference between the counting cycles of the two video systems.
- While setting the menu on the TV screen, buttons for playback do not function.

Recording TV programmes



Basic Operations

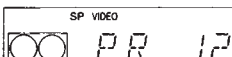
- Turn on your TV and set it to the video channel.
To record from a decoder, turn it on.
- Insert a tape with its safety tab in place. 
-  Press INPUT SELECT until a programme position number appears in the display window. 

continued

32 Basic Operations

Basic Operations 33

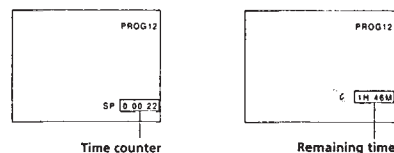
Recording TV programmes (continued)

-  Press PROG +/- to select the programme position you want to record. 
-  Press SP/LP to select the tape speed, SP or LP.
LP (Long Play) provides recording time twice as long as SP (Standard Play), however, SP produces better picture and audio quality. 
-  Press REC to start recording.
The recording indicator lights up red in the display window. 
Recording indicator

To stop recording
Press ■ STOP.

To check the remaining time

Press DISPLAY. With the display on, press COUNTER/REMAIN to check the remaining time. Each time you press COUNTER/REMAIN, the time counter and the remaining time appear alternately. The remaining time with the  indicator also appears in the display window.



To correctly check the remaining time of the tape, set TAPE SELECT in the TAPE OPTIONS menu according to the tape type you use (see page 52).

To watch another TV programme while recording

- Press TV/VIDEO to turn off the VIDEO indicator in the display window.
If the TV is connected to the VCR using only the aerial cable, skip this step.
- Select another programme position on the TV.

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.



continued

Basic Operations

34 Basic Operations

Basic Operations 35

Recording TV programmes (continued)

Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, press the $\div$ (ten's digit) button followed by the programme number buttons.
- You can select a video source from the LINE-1 (TV) or LINE-3 IN connector, or LINE-2 IN jacks using INPUT SELECT or PROG +/- . When you use PROG +/- , "L1," "L3" or "L2" appears in the display window between the lowest programme position and the highest one.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV.

Notes

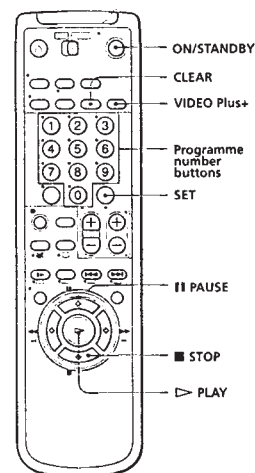
- The display does not appear during still (pause) mode or slow-motion playback.
- The display will not appear while playing an NTSC-recorded tape.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- When you insert a non-standard commercially available tape, the remaining time may not be correct.
- The remaining time doesn't work for an NTSC-recorded tape. "----" appears in the display window.
- The remaining time is intended for rough measurement only.
- If you play back the tape for about 30 seconds after you have inserted it, the remaining time will be displayed.

Recording TV programmes using VIDEO Plus+

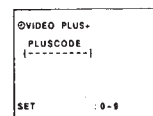
Just enter the programme's "PlusCode" listed in the TV programme guide. The date, times, and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



1 VIDEO Plus+ Press VIDEO Plus+.



continued

Recording TV programmes using VIDEO Plus+ (continued)

2 Press the programme number buttons to enter the programme's PlusCode, then press SET.

If you make a mistake, press VIDEO Plus+ before pressing SET and re-enter the correct number.

The date, start and stop times, programme position, tape speed, and the VPS/PDC function setting appear on the TV screen.

For details of the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 39.

If the information is incorrect, press CLEAR to cancel the setting.

3 If you want to change the date, tape speed, and the VPS/PDC function setting:

1 Press $\leftarrow$ / $\rightarrow$ to flash the item you want to change.

2 Press $\uparrow$ / $\downarrow$ to reset it.

- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 39.
- To record from other source connected to the LINE-1 (TV) or LINE-3 IN connector, or LINE-2 IN jacks, press INPUT SELECT to display "L1", "L3", or "L2" in the "PROG" position.

4 Press OK to complete the setting.

5 Press ON/STANDBY to turn off the VCR.

The $\odot$ indicator appears in the display window and the VCR stands by for recording.

To stop recording

To stop the VCR while recording, press $\blacksquare$ STOP.

Daily/weekly recording

In step 3 above, press $\downarrow$ to select the recording pattern. Each time you press $\downarrow$, the indication changes as shown below. Press $\uparrow$ to change the indication in reverse order.

TODAY $\rightarrow$ SU-SA (Sunday to Saturday) $\rightarrow$ MO-SA (Monday to Saturday) $\rightarrow$ MO-FR (Monday to Friday) $\rightarrow$ SA (every Saturday) $\rightarrow$
 $\rightarrow$ MO (every Monday) $\rightarrow$ SU (every Sunday) $\rightarrow$ 1 month later $\rightarrow$ (dates count down) $\rightarrow$ TODAY

Timer recording with VPS/PDC signals

The broadcast systems transmit VPS (Video Programme System) or PDC (Programme Delivery Control) signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions.

To use the VPS/PDC function, set VPS/PDC to ON. You can also use the VPS/PDC function for a source connected to the LINE-1 (TV), LINE-3 IN connectors, and LINE-2 IN jacks.

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

- Turn on the satellite tuner.
- On the satellite tuner, select the satellite programme for which you want to make a timer setting.
- Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ON/STANDBY. The $\odot$ indicator turns off and the VCR switches on. Remember to press ON/STANDBY to reset the VCR after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

continued

Recording TV programmes using VIDEO Plus+ (continued)

Tips

- To set the tape speed, you can also use the SP/LP button.
- When you are recording a programme in the SP mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the LP mode. Note that some interference will appear on the picture at the point the tape speed is changed. If you want to keep the same tape speed, set AUTO TAPE SPEED to OFF in the TAPE OPTIONS menu (page 52).

Note

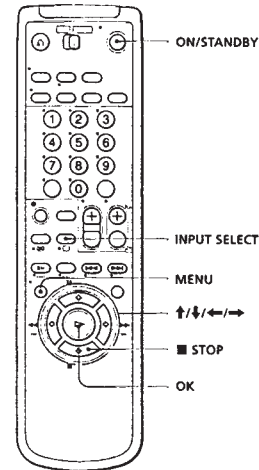
- If the PlusCode is incorrect, the VIDEO Plus+ menu appears instead of the TIMER menu after pressing SET.

Setting the timer manually

If VIDEO Plus+ is not available in your area, follow the instructions below to set the timer to record programmes.

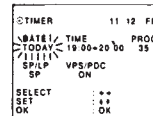
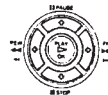
Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.
- To record from a decoder, turn it on.



Basic Operations

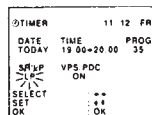
1. Press MENU, then press $\uparrow/\downarrow$ to select TIMER and press OK.



continued

Setting the timer manually (continued)

2. Set the date, start and stop times, programme position, tape speed and VPS/PDC function:
1 Press $\leftarrow/\rightarrow$ to flash each item in turn.
2 Press $\uparrow/\downarrow$ to set each item.
To correct a setting, press $\leftarrow$ to return to that setting and reset.



- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 43.
- To use the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 43.
- To record from other source connected to the LINE-1 (TV) or LINE-3 IN connector, or LINE-2 IN jacks, press INPUT SELECT to display "L1", "L3", or "L2" in the "PROG" position.

3. Press OK.



4. Press ON/STANDBY to turn off the VCR.
The $\odot$ indicator appears in the display window and the VCR stands by for recording.
To record from a source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, press $\blacksquare$ STOP.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ON/STANDBY. The $\odot$ indicator turns off and the VCR switches on. Remember to press ON/STANDBY to reset the VCR after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

Daily/weekly recording

In step 2 above, press $\downarrow$ to select the recording pattern. Each time you press $\downarrow$, the indication changes as shown below. Press $\uparrow$ to change the indication in reverse order.

TODAY $\rightarrow$ SU-SA (Sunday to Saturday) $\rightarrow$ MO-SA (Monday to Saturday) $\rightarrow$ MO-FR (Monday to Friday) $\rightarrow$ SA (every Saturday) $\rightarrow$ MO (every Monday) $\rightarrow$ SU (every Sunday) $\rightarrow$ 1 month later $\rightarrow$ (dates count down) $\rightarrow$ TODAY

Timer recording with VPS/PDC signals

The broadcast systems transmit VPS (Video Programme System) or PDC (Programme Delivery Control) signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions.

To use the VPS/PDC function, set VPS/PDC to ON. You can also use the VPS/PDC function for a source connected to the LINE-1 (TV), LINE-3 IN connectors, and LINE-2 IN jacks.

Tips

- To set the programme position, you can also use the PROG +/- or programme number buttons.
- To set the tape speed, you can also use the SP/LP button.
- When you are recording a programme in the SP mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the LP mode. Note that some interference will appear on the picture at the point the tape speed is changed. If you want to keep the same tape speed, set AUTO TAPE SPEED to OFF in the TAPE OPTIONS menu (page 52).

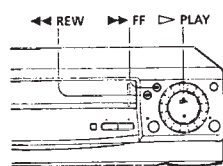
Notes

- When setting the timer with VPS/PDC signals, enter the start and stop times exactly as indicated in the TV programme guide, otherwise the VPS/PDC function won't work.
- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The $\odot$ indicator flashes in the display window when you press ON/STANDBY with no tape inserted.

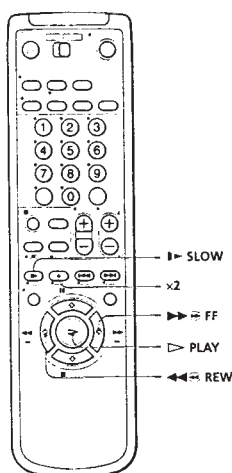
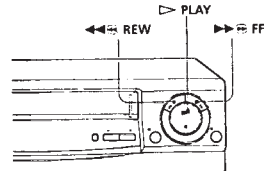
Basic Operations

Playing/searching at various speeds

SLV-E530UX



SLV-E295UX



Playback options	Operation
View the picture during fast-forward or rewind	During fast-forward, hold down $\gg\gg$ FF or $\gg\gg$ FF. During rewind, hold down $\ll\ll$ REW or $\ll\ll$ REW.
Play at high speed	- During playback, press $\gg\gg$ FF or $\ll\ll$ REW. - During playback, hold down $\gg\gg$ FF or $\ll\ll$ REW. To resume normal playback, release the button.
Play at twice the normal speed	During playback, press x2.
Play in slow motion	During playback or pause, press SLOW .
Play frame by frame	During pause, press $\gg\gg$ FF or $\ll\ll$ REW. Hold down the button to play one frame each second.
Rewind and start play	During stop, press PLAY on the VCR while holding down $\ll\ll$ REW or $\ll\ll$ REW on the VCR.

To resume normal playback
Press PLAY .

Playing/searching at various speeds (continued)

Tip

- Adjust the picture using the TRACKING +/- buttons on the VCR if:
 - streaks appear while playing in slow motion
 - the picture shakes while pausing.

To set tracking to the centre position, press both buttons (+/-) at the same time.

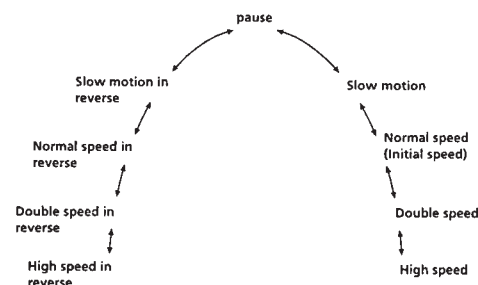
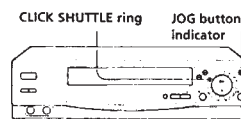
Notes

- The sound is muted during these operations.
- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but the picture quality cannot be guaranteed.
- The picture may shake, be distorted or discoloured during the various playback operations.

Using the CLICK SHUTTLE ring (SLV-E530UX only)

With the CLICK SHUTTLE ring, you can operate a variety of playback options.

During playback or pause, turn the CLICK SHUTTLE ring clockwise or counterclockwise. Each change in the CLICK SHUTTLE ring position changes the playback mode in the following way.



To use the CLICK SHUTTLE ring in jog mode

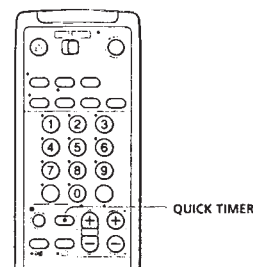
Use this mode for frame-by-frame play back.

Press JOG to enter the jog mode. The JOG button/indicator lights up. If you change to jog mode during any playback mode, playback pauses so you can see a still picture. Each change in the CLICK SHUTTLE ring position shifts the picture one frame. To shift frames in reverse, turn the CLICK SHUTTLE ring counterclockwise. The frame shift speed depends on the speed you turn the CLICK SHUTTLE ring. To cancel the jog mode, press JOG again. The JOG indicator goes off and the VCR enters the pause mode.

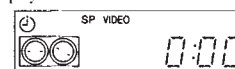
continued

Recording TV programmes using the quick timer

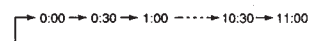
After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.



- While recording, press QUICK TIMER once. The $\odot$ indicator appears in the display window.



- Press QUICK TIMER repeatedly to set the duration. Each press advances the time in increments of 30 minutes.



The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

To stop recording

To stop the VCR while recording, press $\blacksquare$ STOP.

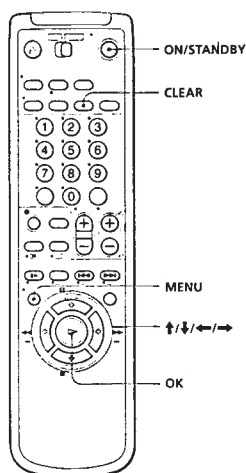
Using the quick timer during stop mode

You can set the quick timer and start recording during stop mode by pressing QUICK TIMER. To set the channel, you can use the PROG +/- or INPUT SELECT buttons. Press QUICK TIMER repeatedly to set the recording duration. The recording will start automatically.

Checking/ changing/ cancelling timer settings

Before you start...

- Turn on your TV and set it to the video channel.



- 1 Press ON/STANDBY to turn on the VCR.
- 2 Press MENU, then press $\uparrow/\downarrow$ to select LIST and press OK:
 - If you want to change a setting, go on to the next step.
 - If you do not need to change the settings, press OK, then turn off the VCR to return to recording standby.
- 3 Press $\uparrow/\downarrow$ to select the setting you want to change or cancel, then press OK.

LIST	TIME	11 12 FR
DATE	1900-2000	BBC2
TU	13 12 0830-1000	CBS
11 12	0500-0530	BBC1
MO-FR	1200-1300	L21
MO-SA	2300-2330	L23
SU-SA	1212-1213	ITV

- 4
 - To change the setting, press $\leftarrow/\rightarrow$ to flash the item you want to change, and press $\uparrow/\downarrow$ to reset it.
 - To cancel the setting, press CLEAR.

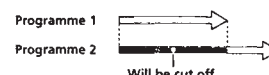
DATE	11 12 FR
TODAY	19 00-20 00 35
SELECT	VPS PDC ON
SET	..
OK	OK

- 5 Press OK.

If any settings remain, turn off the VCR to return to recording standby.

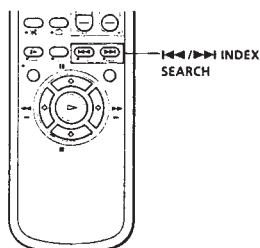
When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



Searching using the index function

The VCR marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording.



- 1 Insert an indexed tape into the VCR.
 - 2 Press $\leftarrow/\rightarrow$ INDEX SEARCH.
 - To search ahead, press $\rightarrow$ INDEX SEARCH.
 - To search backwards, press $\leftarrow$ INDEX SEARCH.
- The VCR starts searching. Playback starts automatically from that point.



To stop searching
Press $\blacksquare$ STOP.

Note

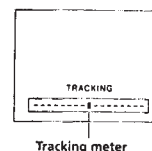
- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the programme position during recording pause.

Adjusting the picture

Adjusting the tracking

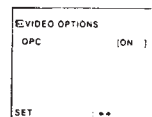
Although the VCR automatically adjusts the tracking when playing a tape (the $\blacksquare$ indicator flashes in the display window; then goes off), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

During playback, press the TRACKING $\pm$ buttons on the VCR to display the tracking meter. The distortion should disappear as you press one of the two buttons. (The $\blacksquare$ indicator lights up.) To resume automatic tracking adjustment eject the tape and restart it.



About Optimum Picture Control (OPC)

Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set OPC to ON in the VIDEO OPTIONS menu (with the OPC indicator in the display window lit). For details, see page 52.



OPC playback

The OPC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with OPC.

OPC recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the OPC function (the OPC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

To deactivate the OPC

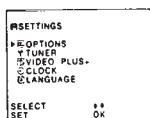
Press MENU and select SETTINGS, OPTIONS, VIDEO OPTIONS then set OPC to OFF. The OPC indicator in the display window goes off.

Note

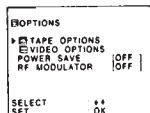
- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape. To avoid the delay, first set the VCR to recording pause (the OPC indicator flashes slowly) and press $\blacksquare$ REC to have the VCR analyse the tape. After the OPC indicator stops flashing, press $\blacksquare$ PAUSE to start recording immediately. If you press $\blacksquare$ PAUSE before the OPC indicator stops flashing, the OPC function is cancelled.

Changing menu options

- 1 Press MENU, then press $\uparrow/\downarrow$ to select SETTINGS and press OK.



- 2 Press $\uparrow/\downarrow$ to select OPTIONS, then press OK.



- 3 Press $\uparrow/\downarrow$ to select the option you want to change:
 - To change the TAPE OPTIONS or VIDEO OPTIONS
 - 1 Press OK after selecting TAPE OPTIONS or VIDEO OPTIONS.
 - 2 Press $\uparrow/\downarrow$ to select the option, then press $\leftarrow/\rightarrow$ to change the setting.
 - To change the other options
 - 1 Press $\leftarrow/\rightarrow$ to change the setting.
- 4 Press OK to return to the original screen.

Menu choices

Initial settings are indicated in bold print.

TAPE OPTIONS

Menu option	Set this option to
AUTO TAPE SPEED	• ON to change the timer recording tape speed automatically to the LP mode when the remaining tape becomes shorter than the recording time. • OFF to keep the set tape speed.
TAPE SELECT	• 300 to use an E-300 type tape. • 240 to use an E-240 type tape. • 195 to use an E-195 or shorter type tape.

VIDEO OPTIONS

Menu option	Set this option to
OPC	• ON to switch on the OPC (Optimum Picture Control) function and improve picture quality. • OFF to switch off OPC.

Other options

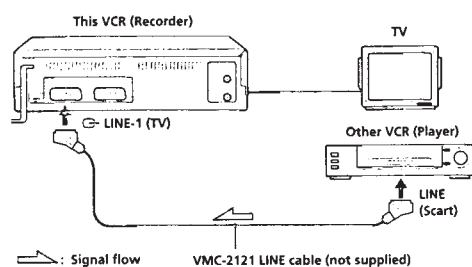
Menu option	Set this option to
POWER SAVE	• OFF to turn on the indicators in the display window while the VCR is standing by. • ON to turn off the indicators in the display window to conserve the VCR power.
RF MODULATOR	• ON if you connect the VCR to your TV using only the aerial cable. • OFF if you connect the VCR to your TV using the EURO-AV cable.

Note

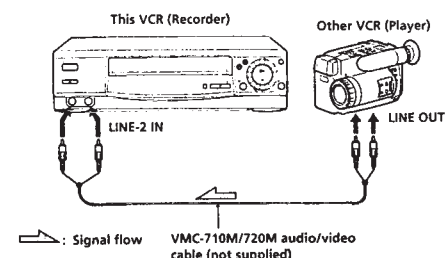
- When you set a timer recording, the indicators in the display window are on even though POWER SAVE is set to ON.

Editing with another VCR

Connecting to record on this VCR



You can connect to the jacks on the front panel.



Notes

- Make sure you connect the plugs to jacks of the same colour.
- If you connect this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.

Operation (when recording on this VCR)

Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L1" (or "L2" or "L3") in the display window.
- Press SP/LP to select the tape speed, SP or LP.



- 1 Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.
- 2 Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press II PAUSE.
- 3 Press $\bullet$ REC on this VCR and set it to recording pause.
- 4 To start editing, press the II PAUSE buttons on both VCRs at the same time.

To stop editing

Press the $\blacksquare$ STOP buttons on both VCRs.

Tips

- To edit more precisely, press the II PAUSE buttons on the VCRs to release pause.
- To cut out unwanted scenes while editing, press II PAUSE on this VCR when an unwanted scene begins. When it ends, press II PAUSE again to resume recording (Assemble Editing).

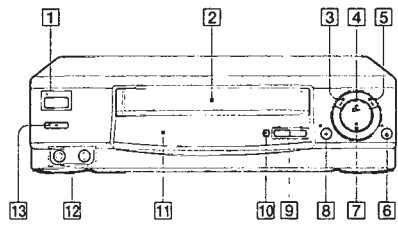
Note

- If you start recording following the procedure above, the VCR won't start recording with the OPC function. To record a tape with the OPC function, press $\bullet$ REC again during recording pause in step 3 so that the VCR analyses the tape. Then, when you start editing in step 4, press II PAUSE after the OPC indicator stops flashing. If you press II PAUSE before the OPC indicator stops flashing, the OPC function is cancelled.

Index to parts and controls

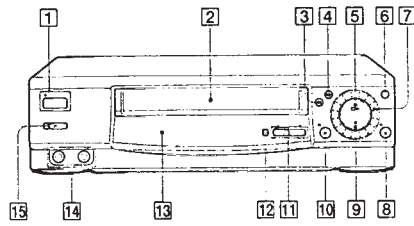
Refer to the pages indicated in parentheses () for details.

Front panel (SLV-E295UX)



- | | |
|---|---|
| 1 ON/STANDBY switch/indicator (38) | 8 II PAUSE button (31) |
| 2 Tape compartment | 9 PROGRAM/TRACKING +/- buttons (34, 51) |
| 3 << REW (rewind) button (31, 44) | 10 AUTO SET UP/RF (Radio Frequency) CHANNEL button (11, 13) |
| 4 > PLAY button (30) | 11 Remote sensor (5) |
| 5 >>> FF (fast-forward) button (31, 44) | 12 LINE-2 IN VIDEO/AUDIO jacks (54) |
| 6 ● REC (record) button (34) | 13 ▲ EJECT button (31) |
| 7 ■ STOP button (34) | |

Front panel (SLV-E530UX)

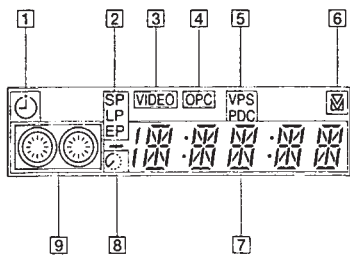


- | | |
|---|---|
| 1 ON/STANDBY switch/indicator (38) | 10 II PAUSE button (31) |
| 2 Tape compartment | 11 PROGRAM/TRACKING +/- buttons (34, 51) |
| 3 << REW (rewind) button (31, 44) | 12 AUTO SET UP/RF (Radio Frequency) CHANNEL button (11, 13) |
| 4 >>> FF (fast-forward) button (31, 44) | 13 Remote sensor (5) |
| 5 > PLAY button (30) | 14 LINE-2 IN VIDEO/AUDIO jacks (54) |
| 6 JOG button/indicator (45) | 15 ▲ EJECT button (31) |
| 7 CLICK SHUTTLE ring (45) | |
| 8 ● REC (record) button (34) | |
| 9 ■ STOP button (34) | |

continued

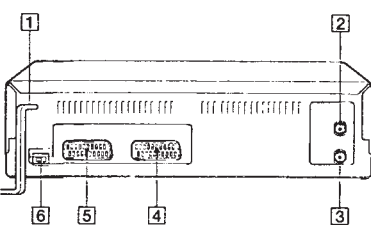
Index to parts and controls (continued)

Display window



- | | |
|--|---|
| 1 Timer indicator (38) | 6 Tracking indicator (51) |
| 2 Tape speed indicators (34) | 7 Time counter/clock/line/programme position indicator (31, 34, 55) |
| 3 VIDEO indicator (35) | 8 Remaining time indicator (35) |
| 4 OPC (Optimum Picture Control) indicator (51) | 9 Tape/recording indicator (34) |
| 5 VPS/PDC (Video Programme System/Programme Delivery Control) indicator (39, 43) | |

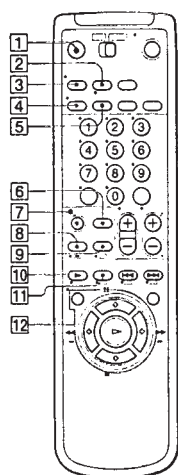
Rear panel



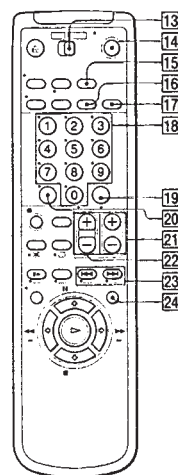
- | | |
|---|--|
| 1 Mains lead (9) | 5 G- LINE-1 (TV)
G- LIGNE-1 (TV) connector (10, 54) |
| 2 AERIAL IN ANTENNE ENTREE connector (9) | 6 NTSC PB (PlayBack) switch (31) |
| 3 AERIAL OUT ANTENNE SORTIE connector (9) | |
| 4 G- LINE-3 IN
G- ENTREE LIGNE-3 connector | |

continued

Remote commander



- 1 ▲ EJECT button (31)
 - 2 COUNTER RESET button (31)
 - 3 DISPLAY button (31)
 - 4 WIDE button (for TV) (6)
 - 5 TV / VIDEO button (35)
 - 6 QUICK TIMER button (47)
 - 7 ● REC (record) button (34)
 - 8 SP (Standard Play)/LP (Long Play) button (34)
 - 9 INPUT SELECT button (33, 42)
 - 10 SLOW button* (44)
 - 11 x2 button* (44)
 - 12 Tape / menu operatin buttons
- MENU button (14, 52)
- PAUSE / ⏏ button (31)
- STOP / ⏏ button (34)
- ⏮ REW (rewind) / ⏮ button (31, 44)
- ⏭ FF (fast-forward) / ⏭ button (31, 44)
- ▷ PLAY / OK button (30)

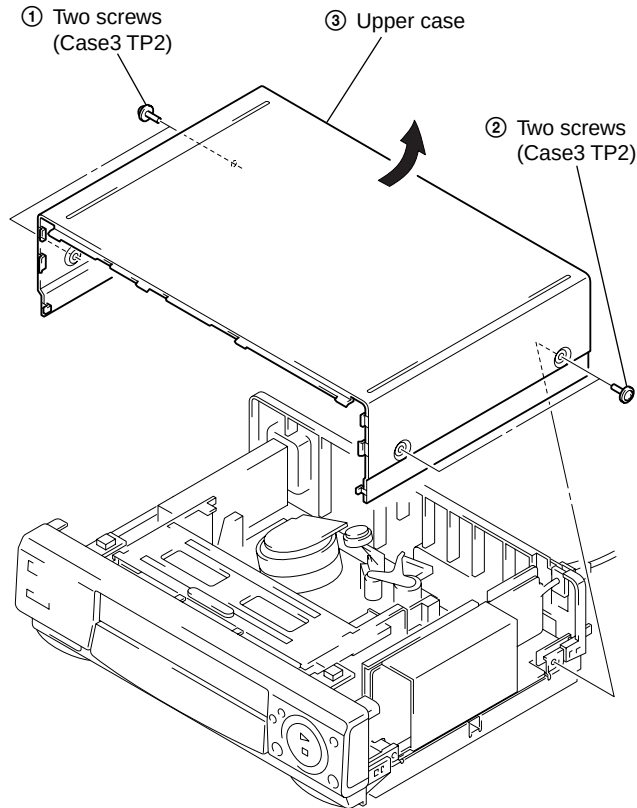


- 13 TV / VIDEO remote control switch (5)
- 14 ON / STANDBY switch (38)
- 15 COUNTER / REMAIN button (35)
- 16 CLEAR button (49)
- 17 VIDEO Plus+ button (37)
- 18 Programme number buttons (24, 38)
- 19 SET button (38)
- 20 -- (ten's digit) button (36)
- 21 PROG (programme) +/- buttons (34)
- 22 Teletext page access buttons (for TV) (6)
- 23 VOL (volume) +/- buttons (for TV) (6)
- 24 INDEX SEARCH buttons* (50)
- 25 REPLAY button (31)
- * FASTTEXT buttons (for TV)

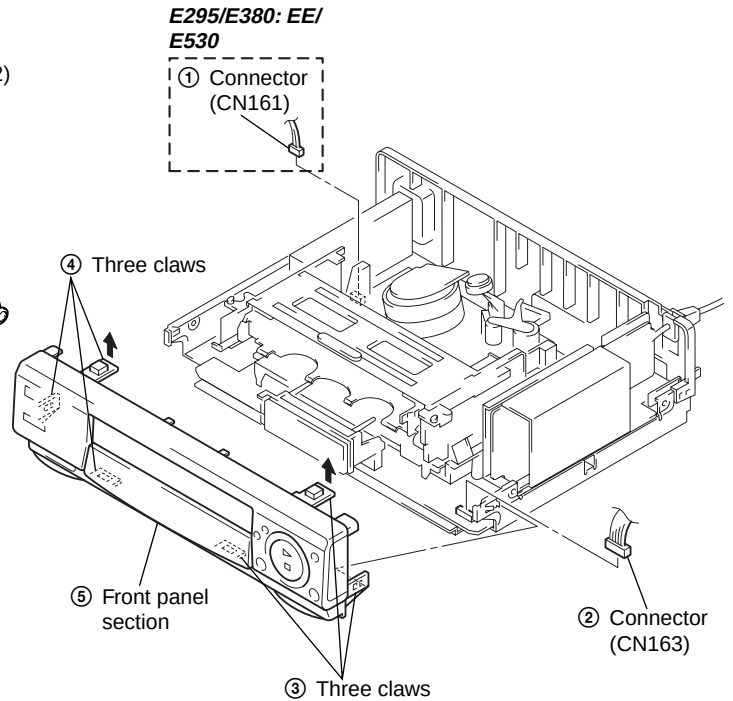
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

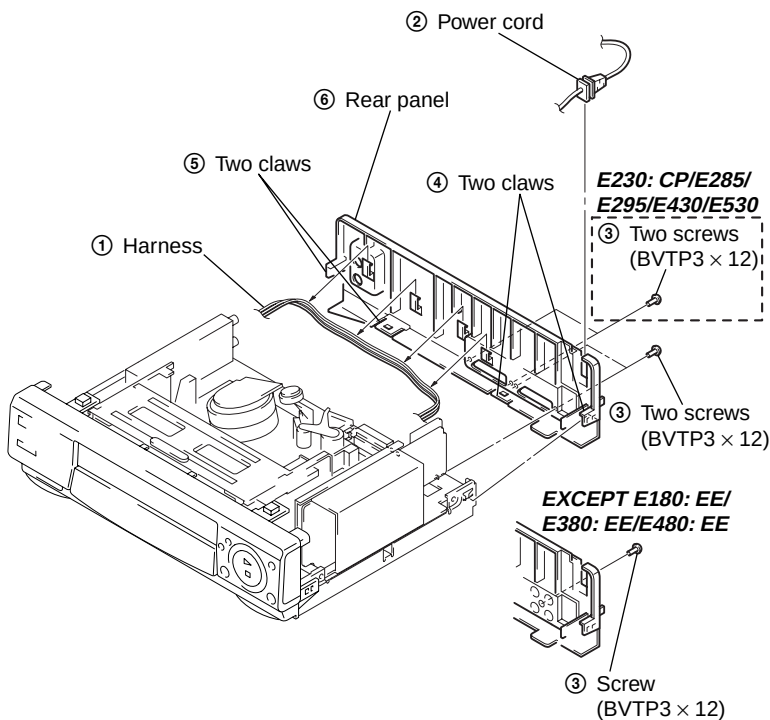
2-1. UPPER CASE REMOVAL



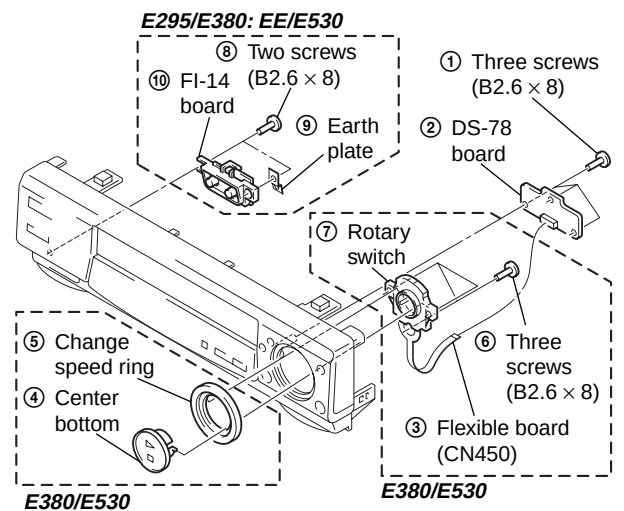
2-3. FRONT PANEL SECTION REMOVAL



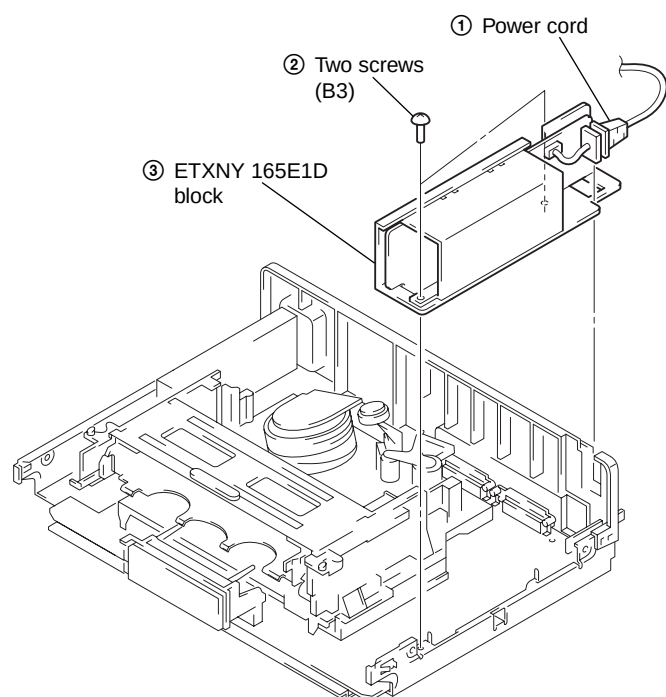
2-2. REAR PANEL REMOVAL



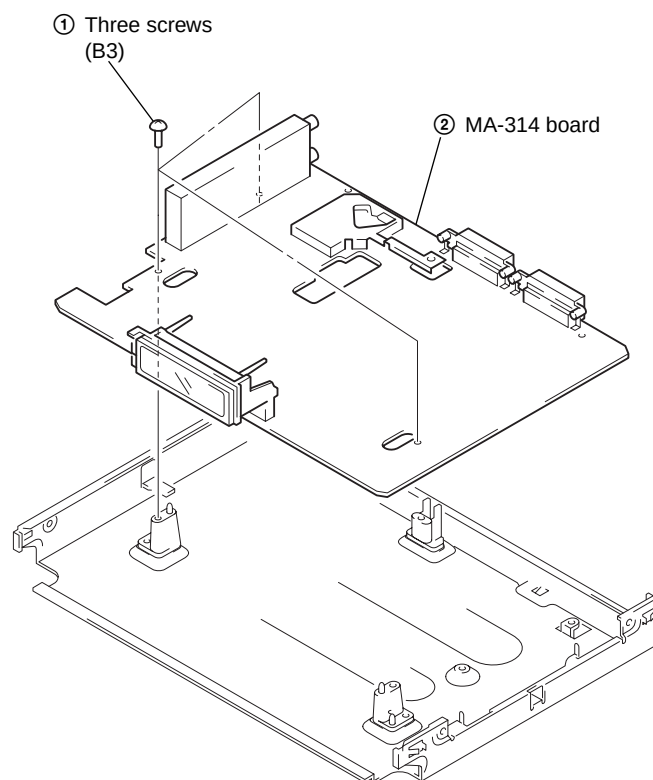
2-4. DS-78, FI-14 BOARD REMOVAL



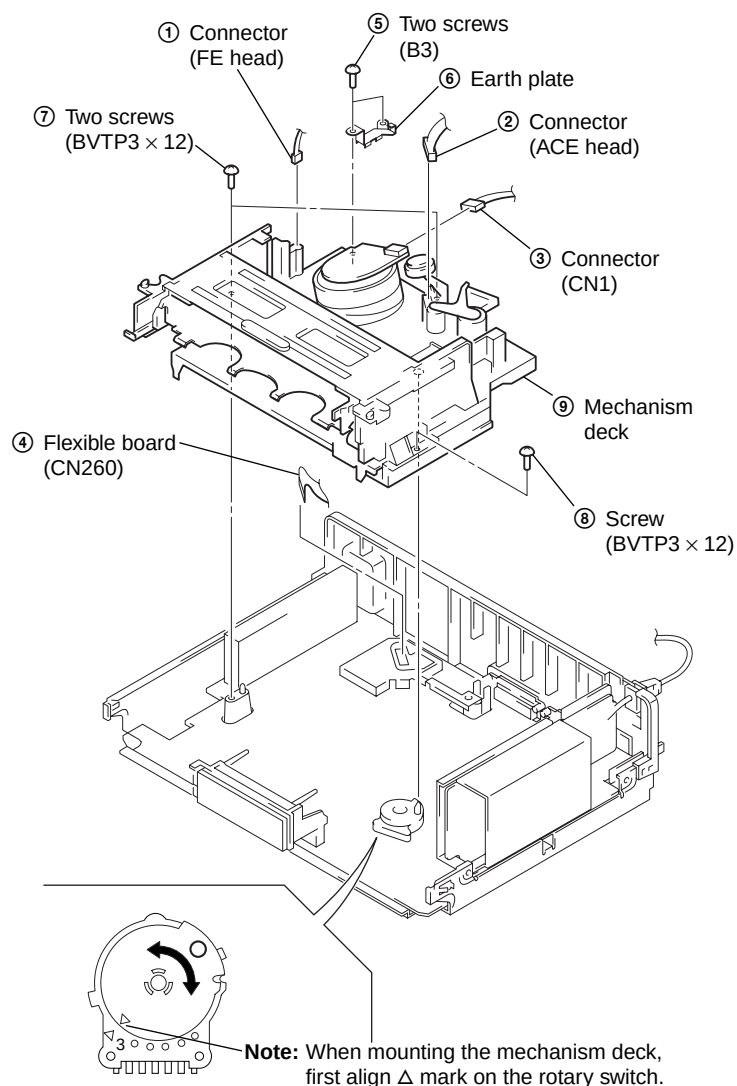
2-5. ETXNY 165E1D BLOCK REMOVAL



2-7. MA-314 BOARD REMOVAL

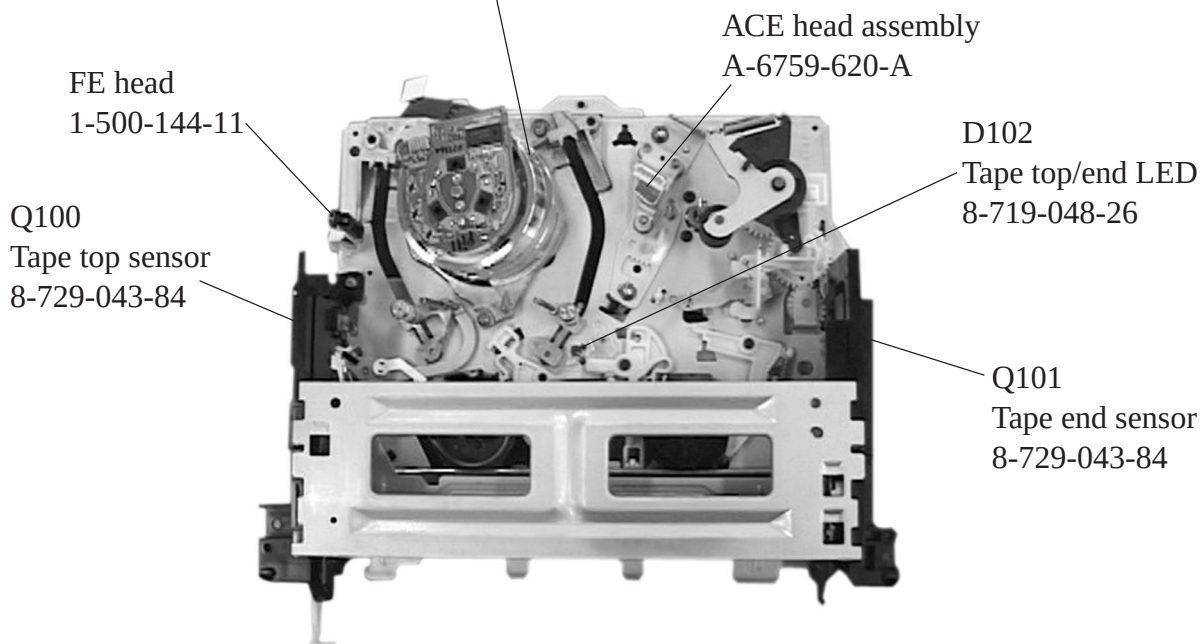


2-6. MECHANISM DECK REMOVAL



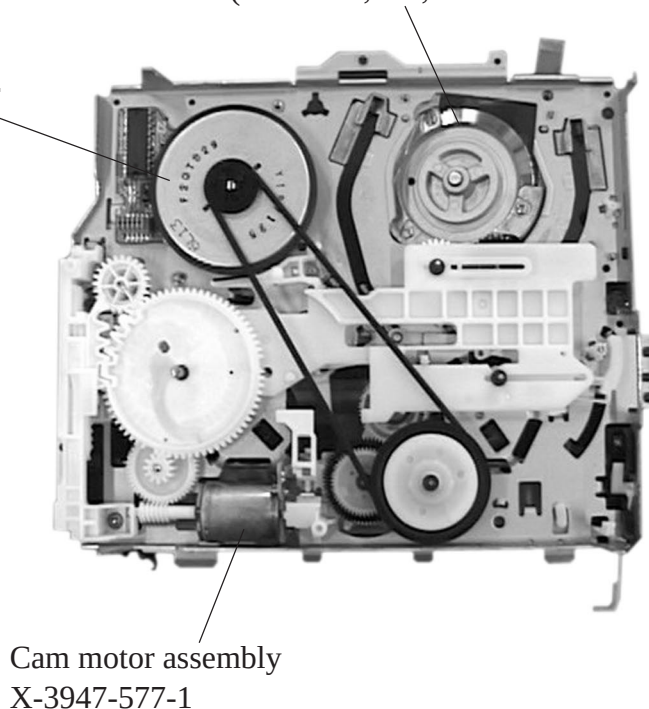
2-8. INTERNAL VIEWS

Drum assembly (M901) (DZH-78A-R)
 1-759-183-11 (E130/E177/E180/E230: AE, CP, VP2/E285: B/E380)
 Drum assembly (M901) (DZH-93A-R)
 1-759-522-11 (E430/E477/E480/E530)
 Drum assembly (M901) (DZH-92A-R)
 1-759-523-11 (E230: EY, UY, VP1/E285: VC/E295)

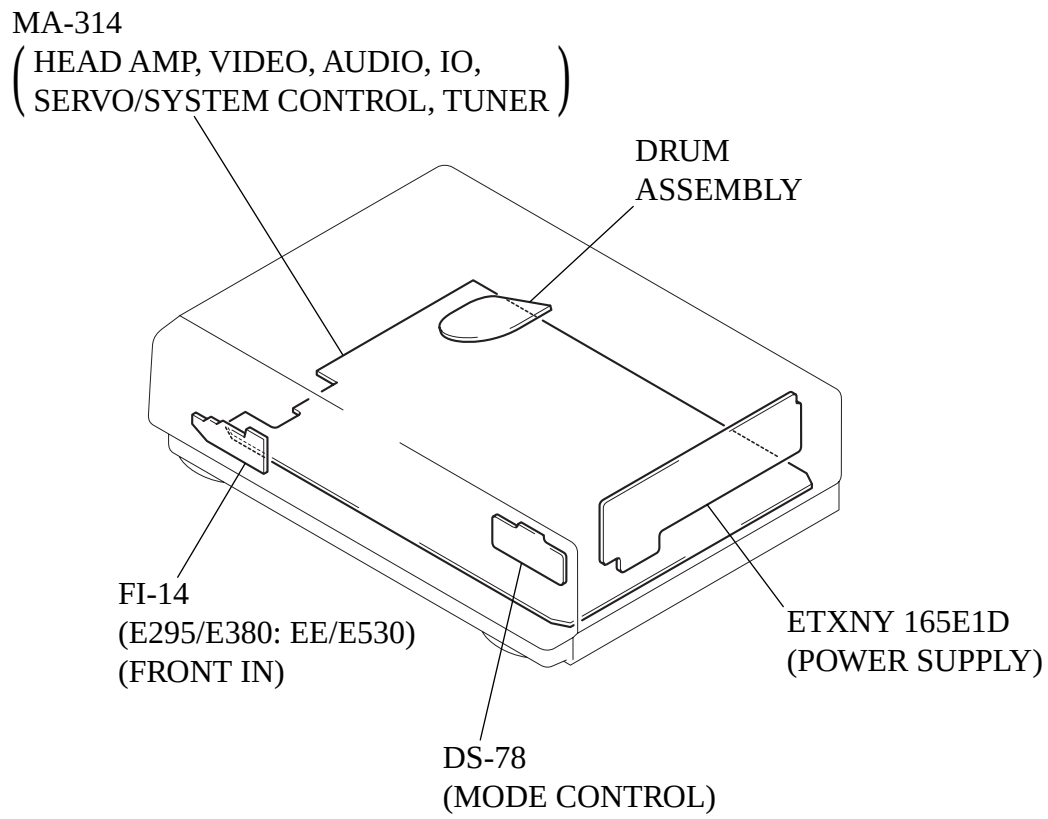


Drum assembly (M901) (DZH-78A-R)
 1-759-183-11 (E130/E177/E180/E230: AE, CP, VP2/E285: B/E380)
 Drum assembly (M901) (DZH-93A-R)
 1-759-522-11 (E430/E477/E480/E530)
 Drum assembly (M901) (DZH-92A-R)
 1-759-523-11 (E230: EY, UY, VP1/E285: VC/E295)

Capstan motor
1-698-971-11

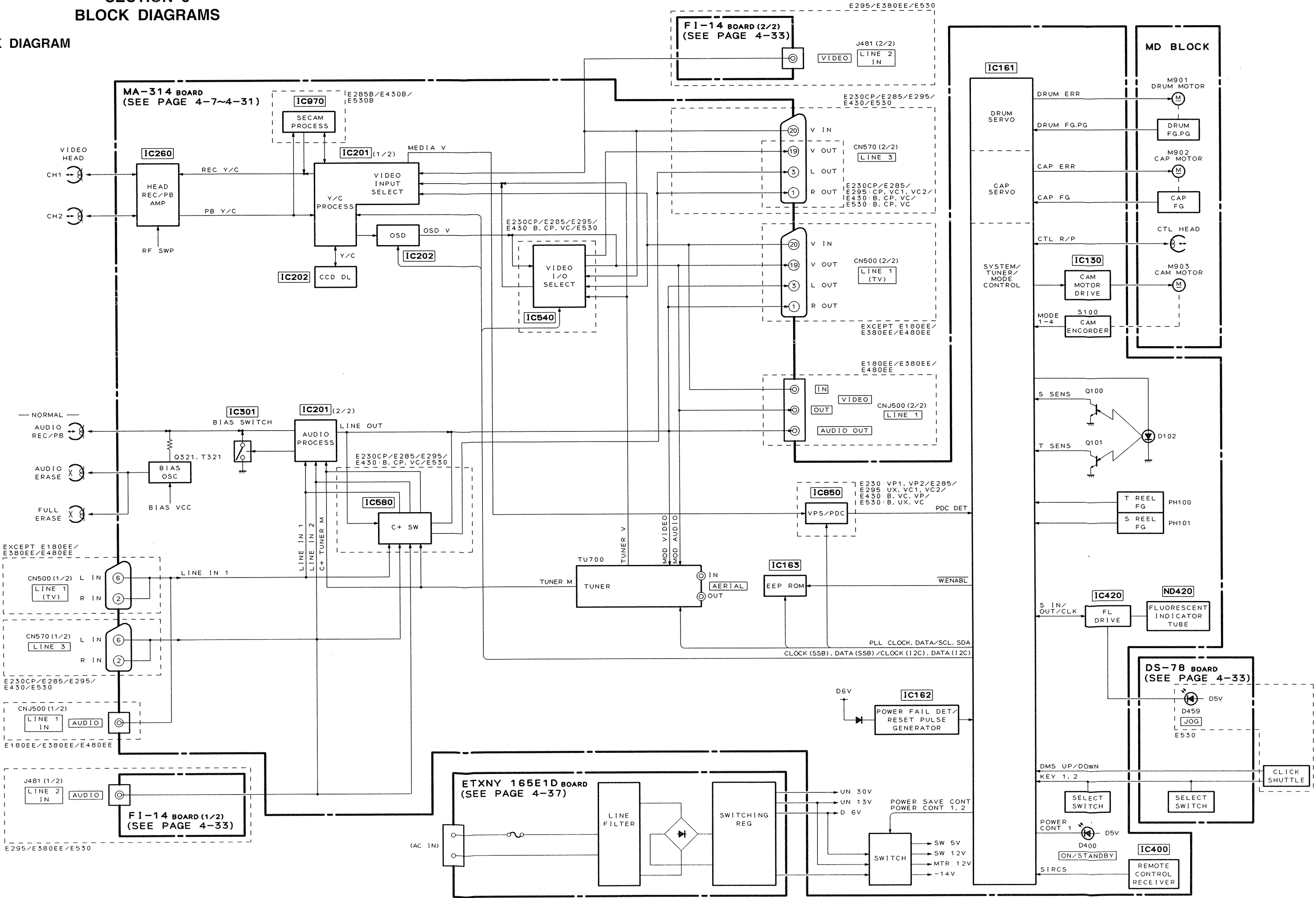


2-9. CIRCUIT BOARDS LOCATION

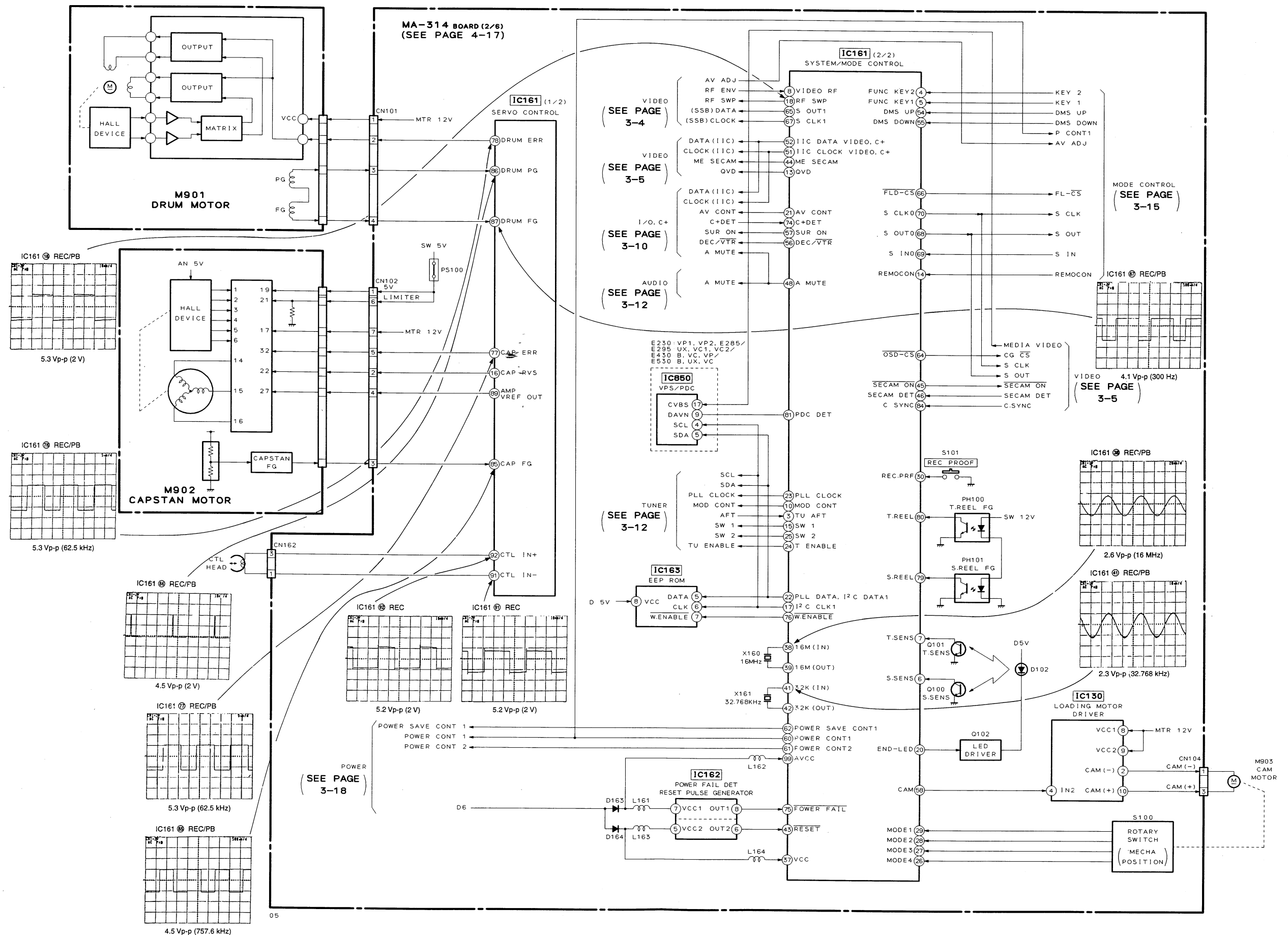


SECTION 3
BLOCK DIAGRAMS

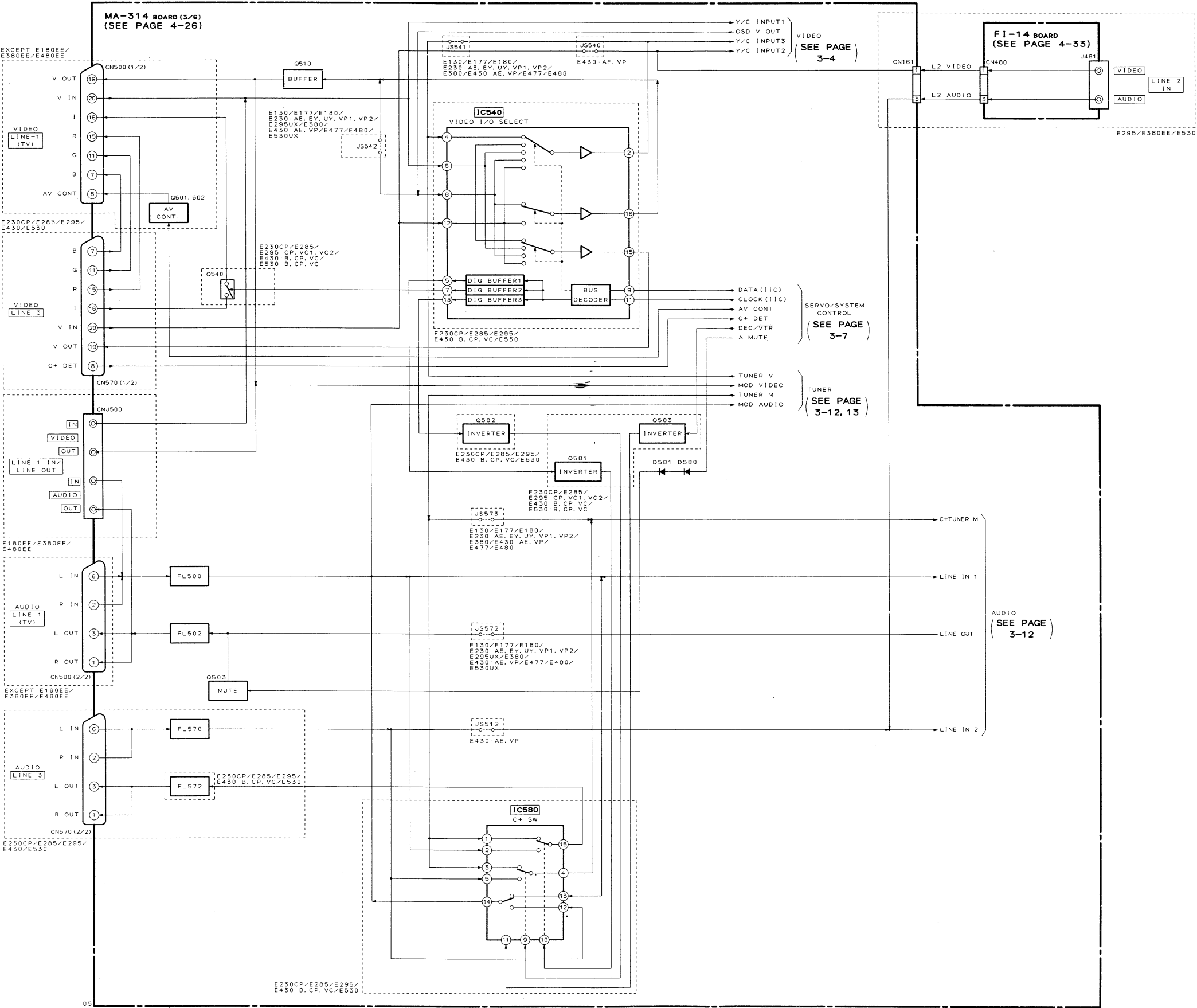
3-1. OVERALL BLOCK DIAGRAM



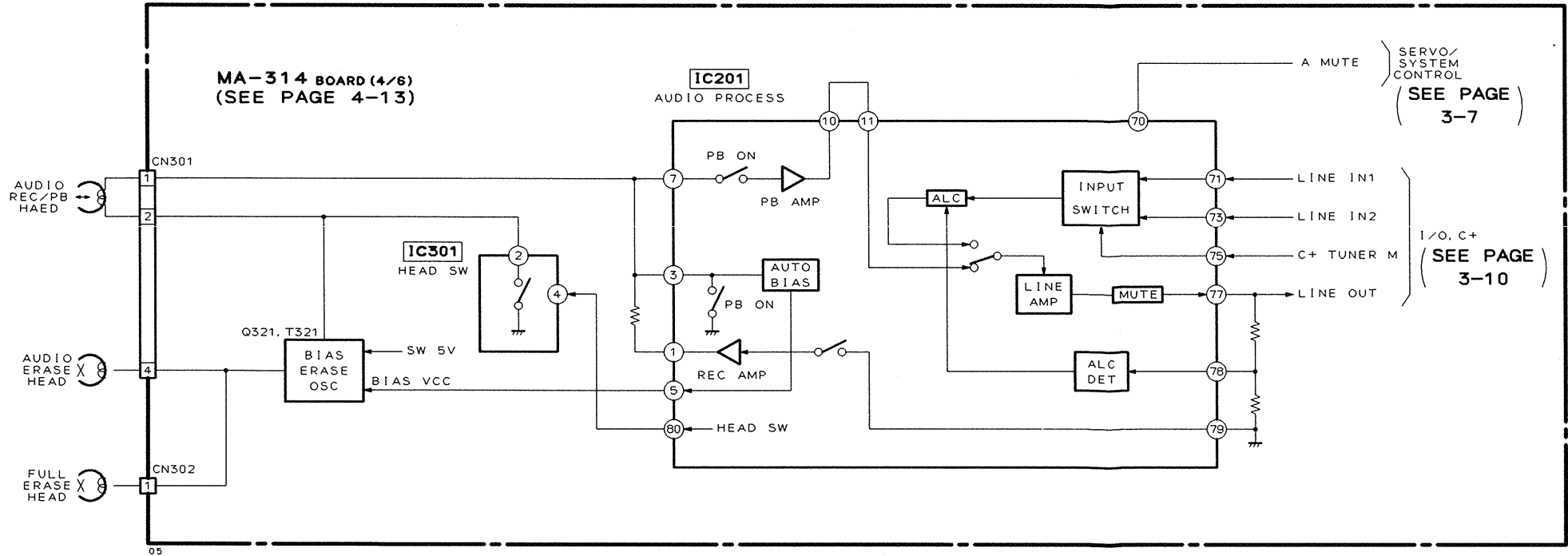




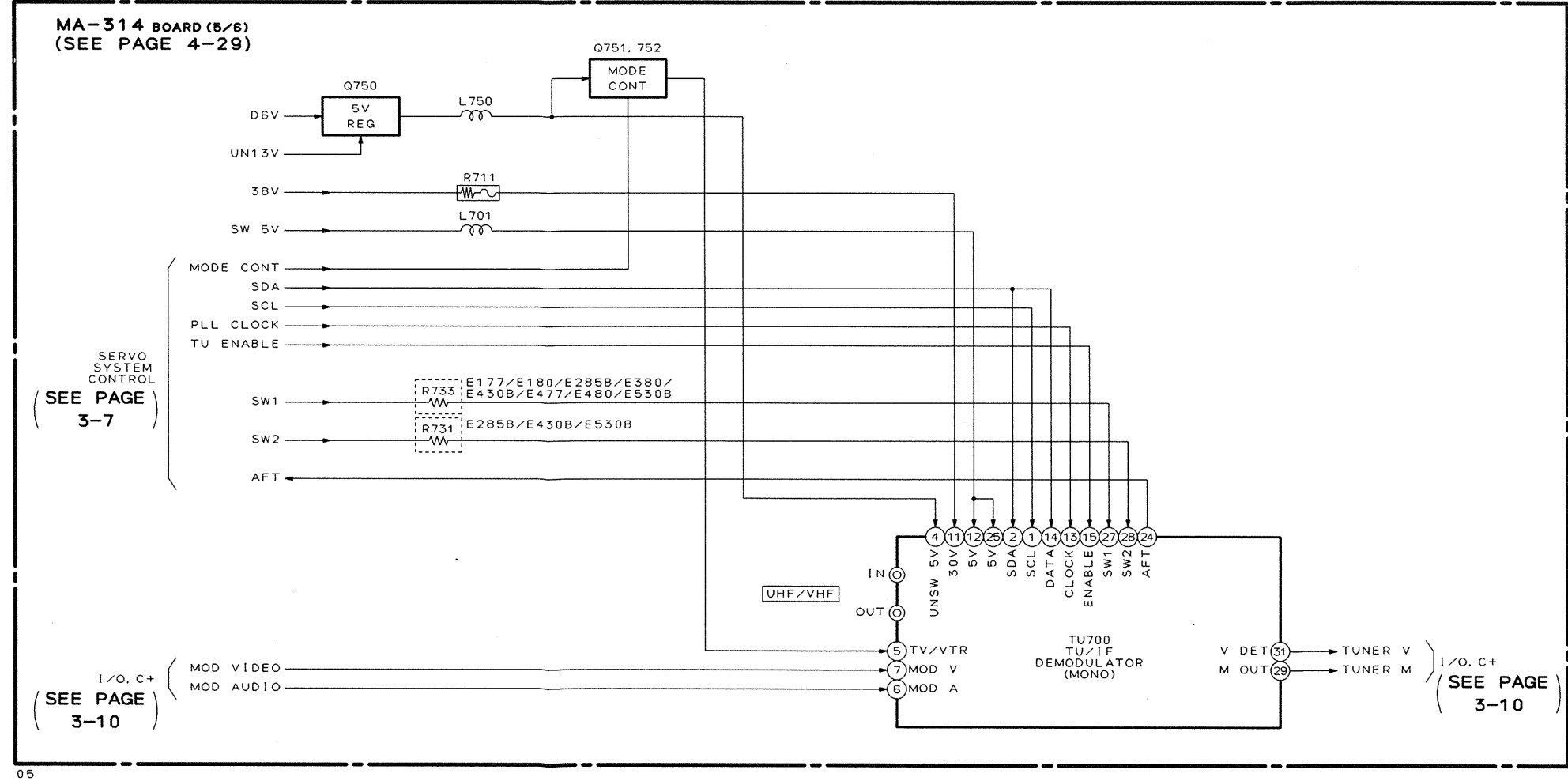
3-4. I/O, C+ BLOCK DIAGRAM



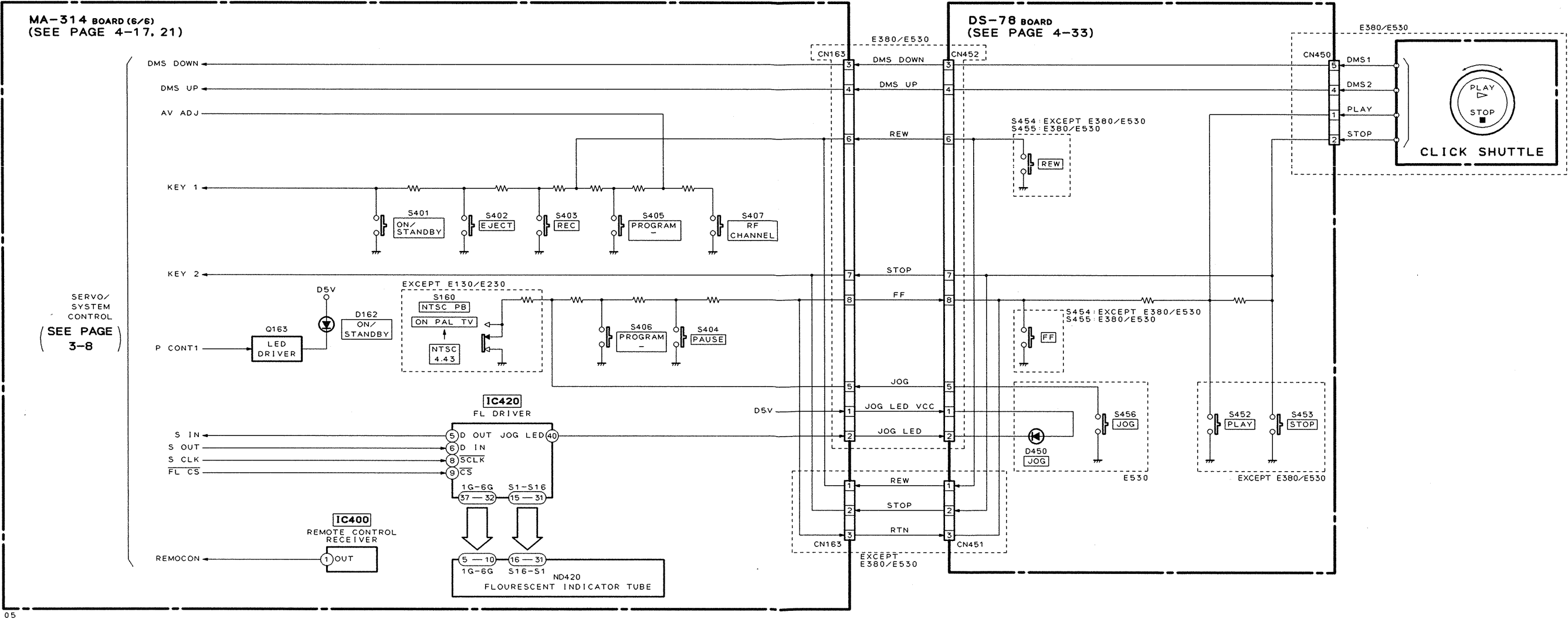
3-5. AUDIO BLOCK DIAGRAM



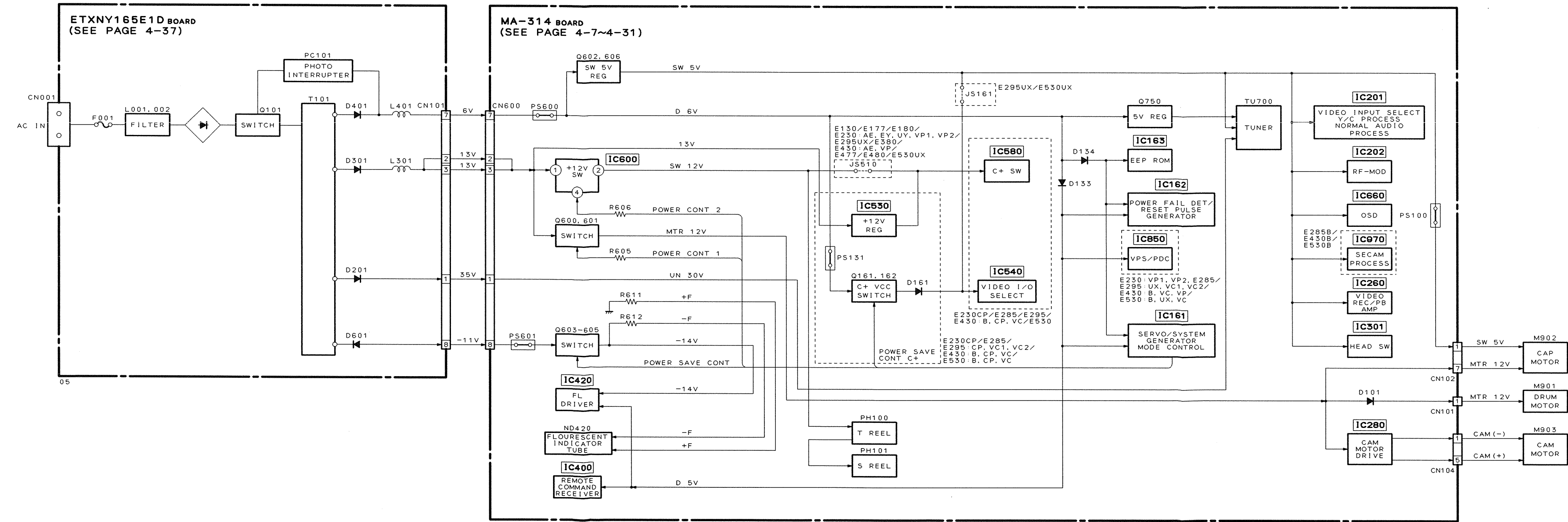
3-6. TUNER BLOCK DIAGRAM



3-7. MODE CONTROL BLOCK DIAGRAM



3-8. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRED BOARDS
AND
SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING
BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary mote is printed
in each block.)

- For printed wiring boards:
- : indicates a lead wire mounted on the component side.
 - : indicates a lead wire mounted on the printed side.
 - : Through hole.
 - : Parts mounted on the conductor side.
 - ▨ : Pattern from the side which enables seeing.
 - ▩ : Pattern on the rear side.*
 - Circled numbers refer to waveforms.

Caution:
Pattern face side: Parts on the pattern face side seen from
(Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from
(Component Side) the parts face are indicated.

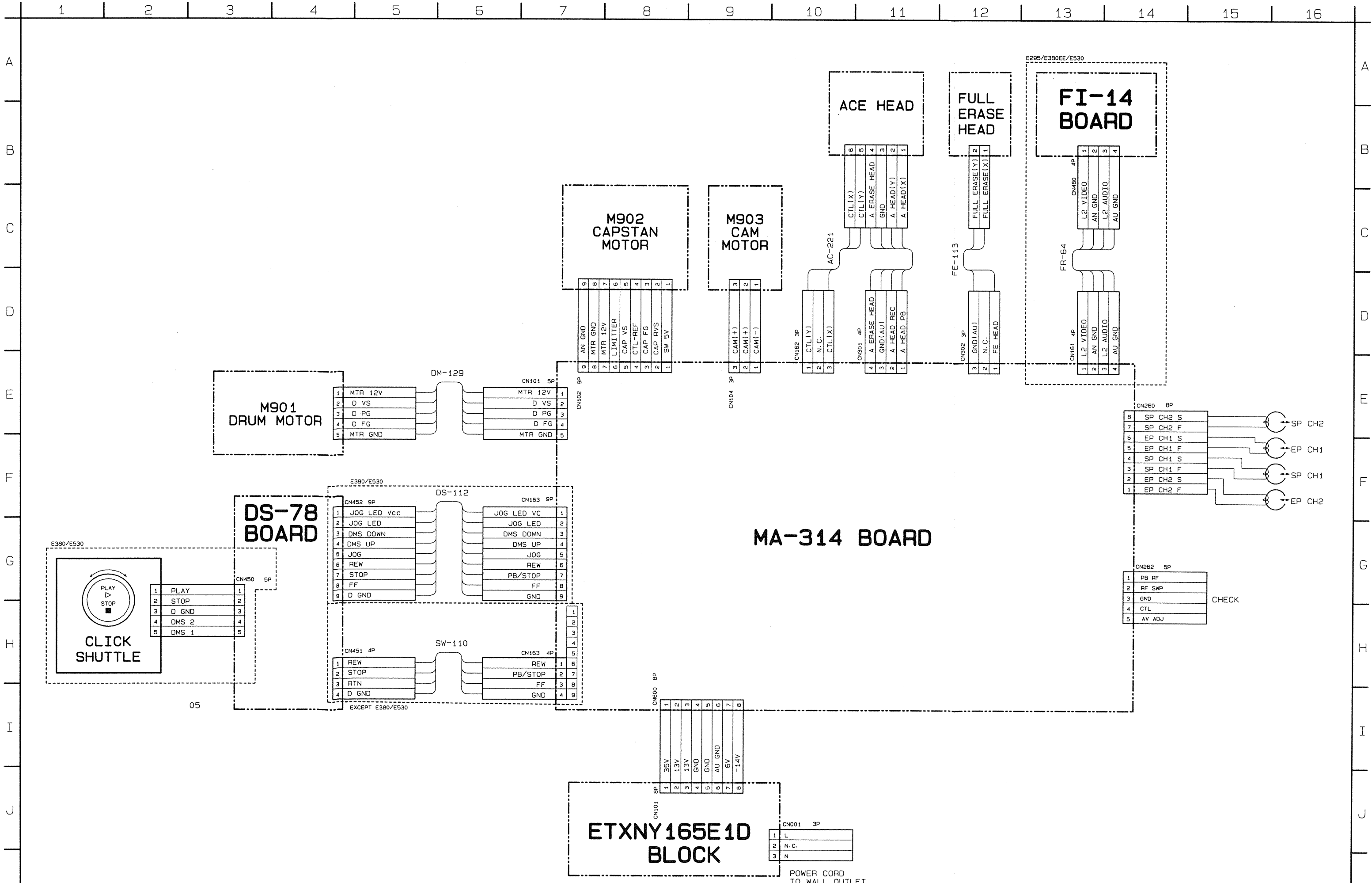
- For schematic Diagram:
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor,
because it is damaged by the heat.
 - All resistors are in ohms, 1/4 W (Chip resistors : 1/10 W) un-
less otherwise specified.
kΩ : 1000Ω, MW : 1000kΩ.
 - All capacitors are in μF unless otherwise noted. pF : μF
50V or less are not indicated except for electrolytics and
tantalums.
 - All variable and adjustable resistors have characteristic curve
B, unless otherwise noted.
 - ⎓ : nonflammable resistor.
 - ⎓ : fusible resistor.
 - : panel designation.
 - △ : internal component.
 - : adjustment for repair.*
 - : B+ Line.*
 - : B- Line.*
 - ⇒ : IN/OUT direction of B line (+, -).*
 - Circled numbers refer to waveforms.*
 - Voltages are dc between measurement point.*
 - Readings are taken with a color-bar signal input.*
 - Readings are taken with a digital multimeter (DC 10MW).*
 - Voltage variations may be noted due to normal production
tolerances.*

Note: The components identified by mark △ or dotted line
with mark △ are critical for safety.
Replace only with part number specified.

When indicating parts by reference
number, please include the board
name.

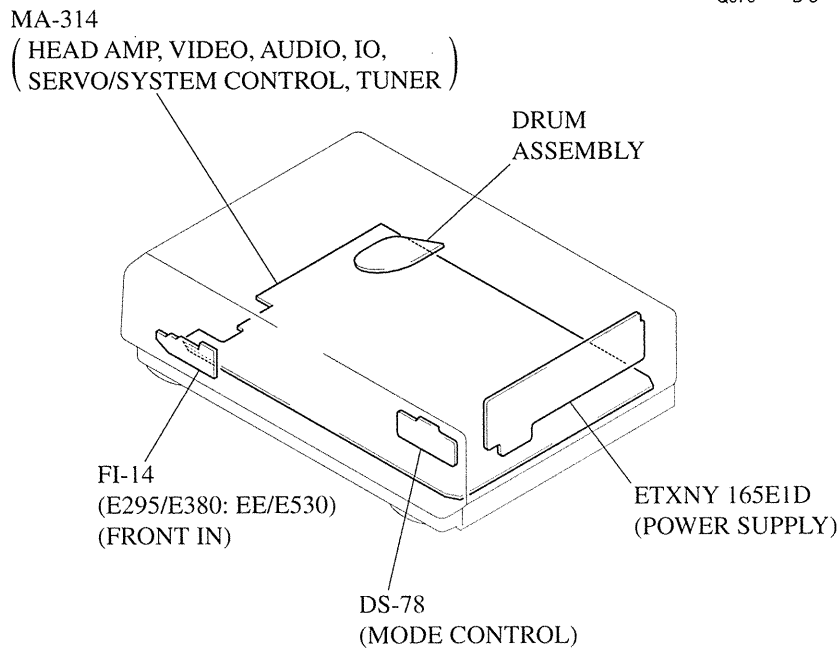
- * : indicated by the color red.

4-1. FRAME SCHEMATIC DIAGRAM



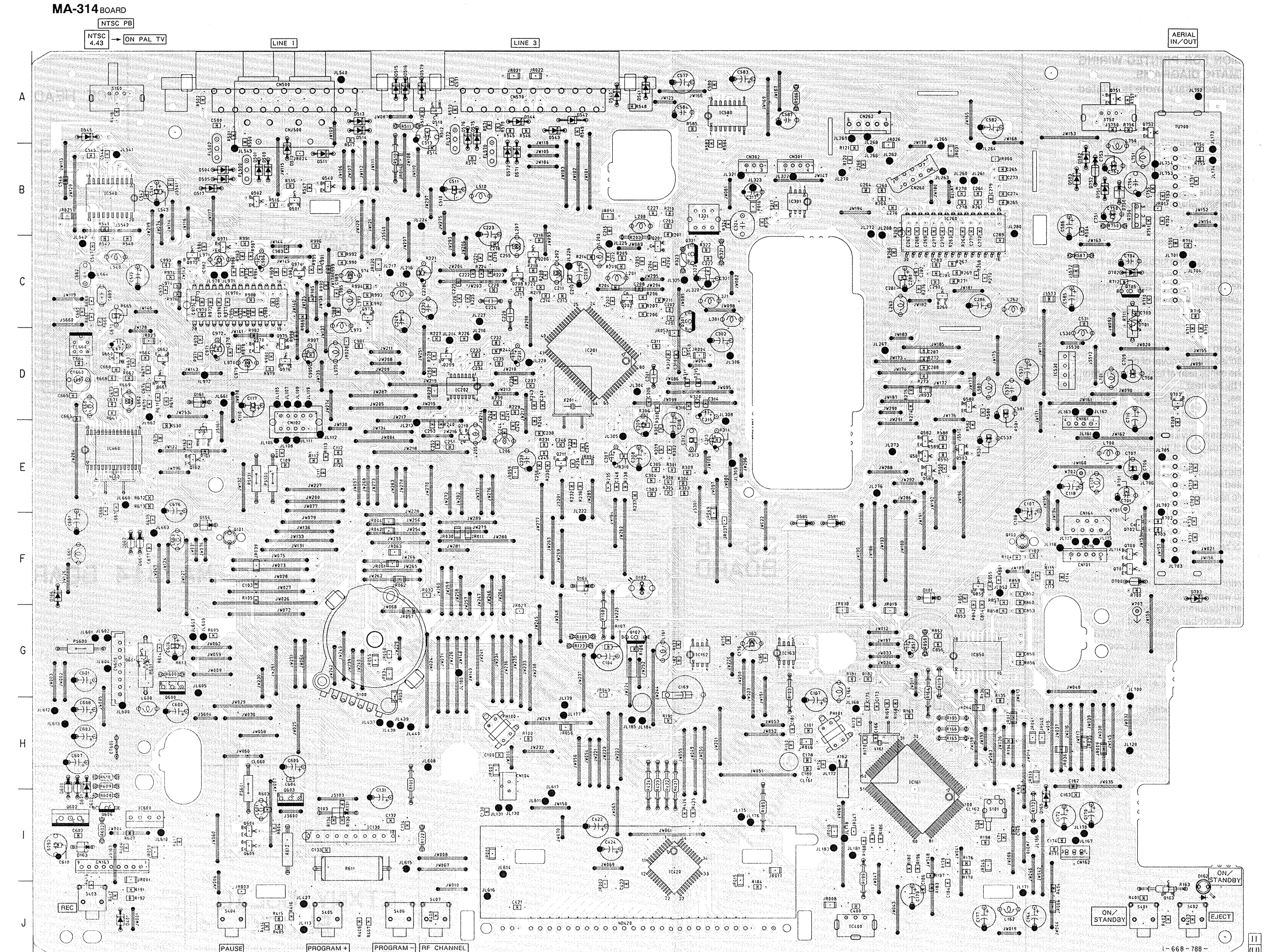
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

MA-314 BOARD			
CN101	F-12	IC130	I-4
CN102	E-3	IC161	H-10
CN104	H-6	IC162	G-8
CN161	E-12	IC163	G-9
CN162	I-12	IC201	D-7
CN163	I-1	IC202	D-5
CN260	B-10	IC260	B-10
CN262	A-10	IC301	B-9
CN301	B-9	IC400	J-9
CN302	B-8	IC420	I-7
CN500	A-3	IC530	D-12
CN570	A-6	IC540	B-1
CN600	G-1	IC580	A-8
		IC600	I-2
D101	F-10	IC660	E-1
D102	F-7	IC850	G-11
D104	F-2	IC970	C-3
D161	D-2		
D162	J-13	Q100	F-11
D163	I-1	Q101	F-3
D164	F-6	Q102	G-7
D165	I-12	Q161	E-2
D166	F-1	Q162	E-2
D401	J-1	Q163	J-13
D500	B-3	Q201	C-7
D501	B-3	Q202	C-7
D504	B-3	Q208	C-6
D505	B-3	Q209	D-5
D511	B-4	Q210	E-2
D512	B-3	Q211	E-6
D513	A-4	Q280	C-10
D514	A-4	Q301	C-8
D515	A-4	Q321	C-8
D516	A-5	Q501	B-3
D517	B-2	Q502	B-3
D540	A-7	Q503	E-11
D541	A-7	Q510	A-5
D542	A-6	Q540	B-4
D543	A-6	Q580	D-11
D544	A-6	Q581	E-10
D545	A-1	Q582	E-10
D571	B-6	Q583	E-10
D572	B-6	Q600	G-2
D575	A-5	Q601	G-2
D576	A-5	Q602	I-1
D579	A-5	Q603	I-3
D580	F-9	Q604	I-3
D581	F-9	Q605	I-3
D582	B-12	Q606	I-1
D583	B-12	Q660	D-1
D600	H-1	Q661	D-2
D601	H-1	Q662	D-2
D602	H-1	Q750	B-13
D661	F-1	Q751	A-12
D662	F-2	Q752	A-13
D702	C-12	Q850	F-11
D703	F-13	Q870	D-3
D751	B-12	Q872	C-2
D752	B-12	Q874	C-3
		Q875	D-3
		Q976	D-3



MA-314 (HEAD AMP, VIDEO, AUDIO, IO, SERVO/SYSM CONTROL, TUNER) PRINTED WIRING BOARD
- Ref. No.: MA-314 board; 1,000 series -

There are few cases that the part isn't mounted in this model is printed on this diagram.

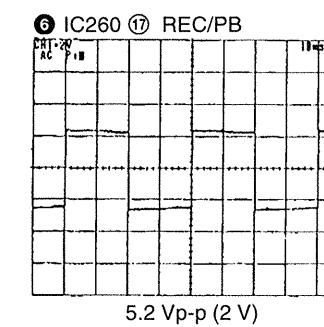


— Ref. No.: MA-314 board; 1,000 series —

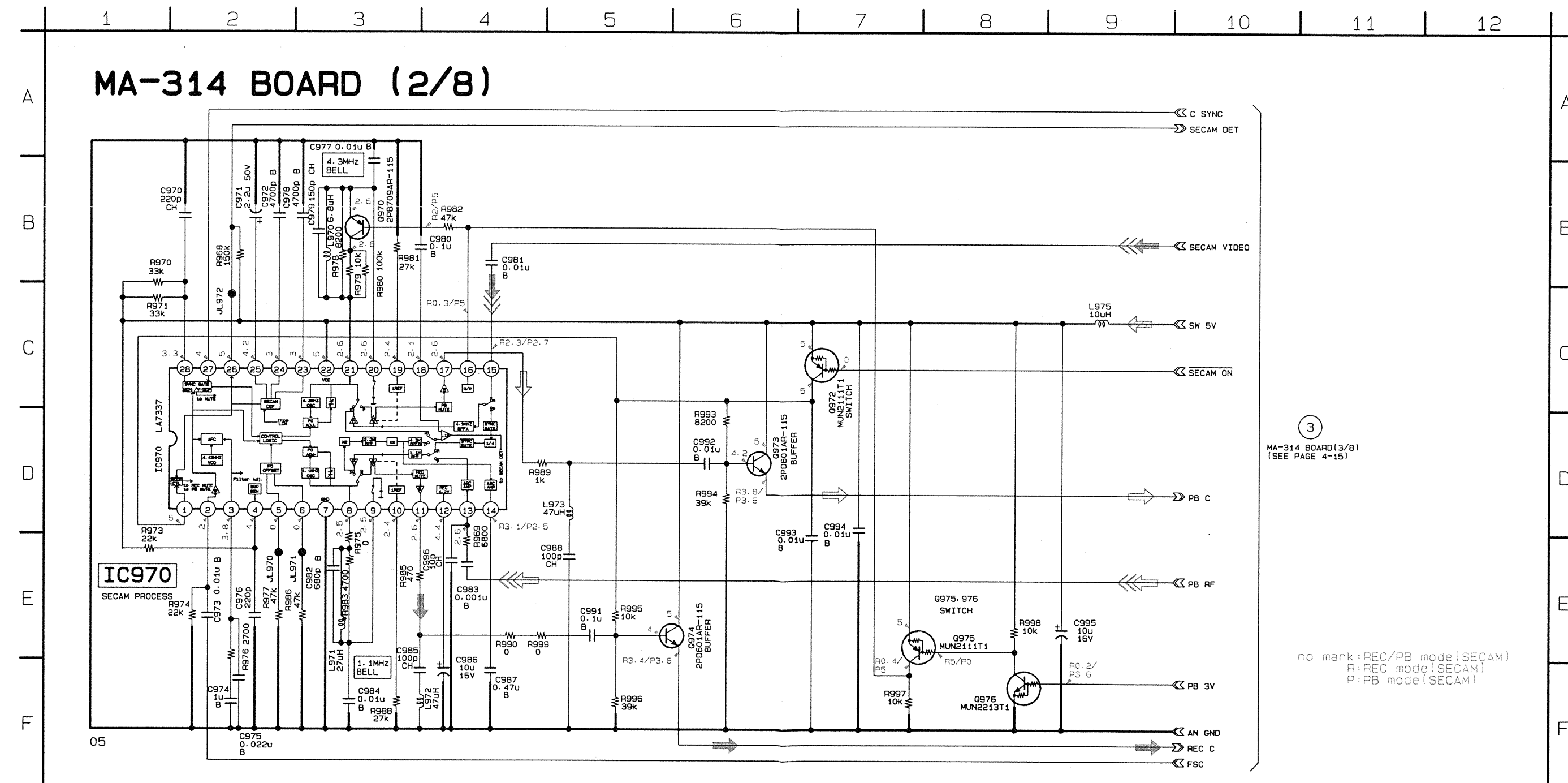


	VIDEO SIGNAL
	Y/CHROMA
REC	
PB	

- **Waveforms**



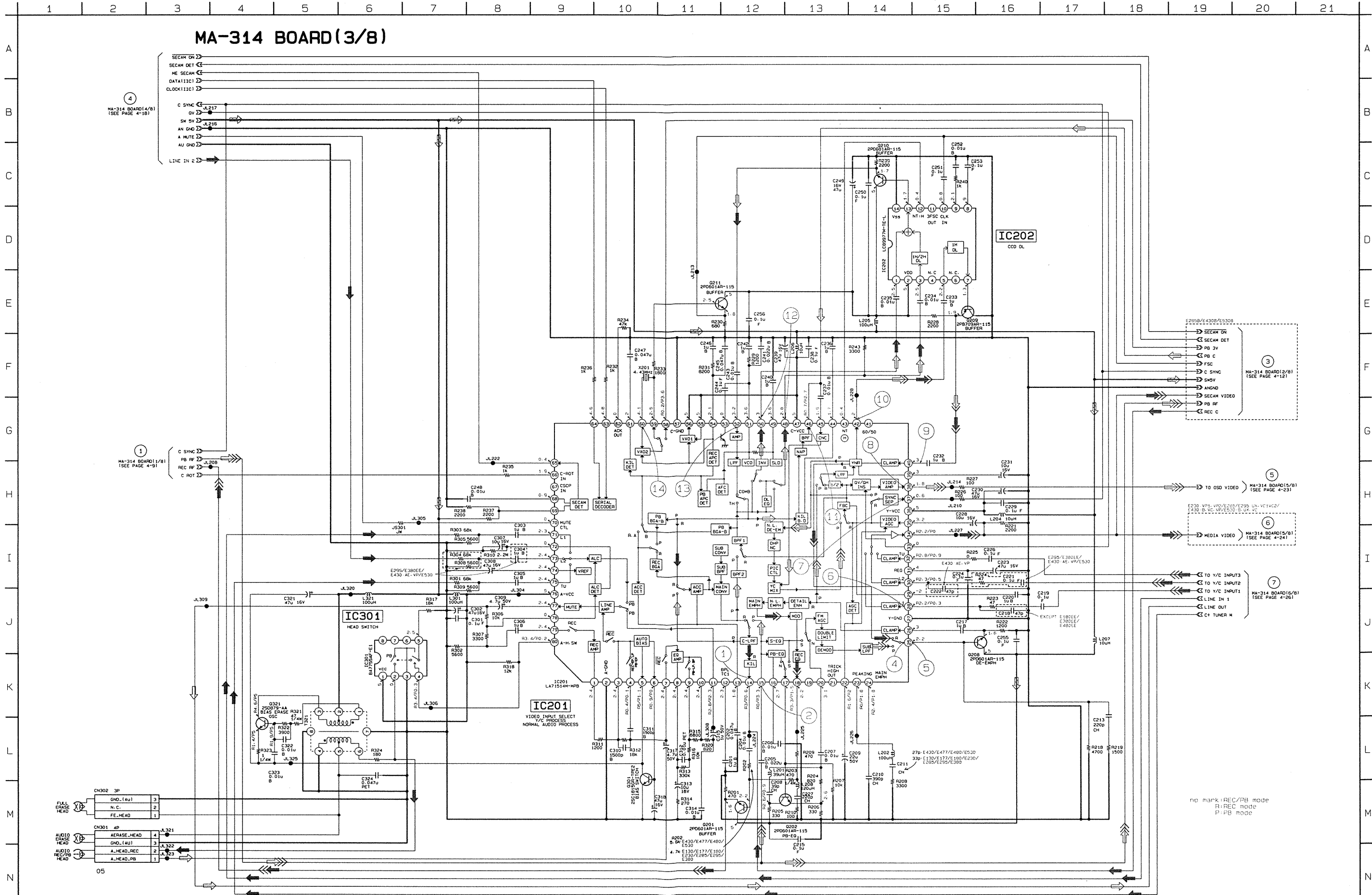
MA-314 (SECAM) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.
– Ref. No.: MA-314 board; 1,000 series –



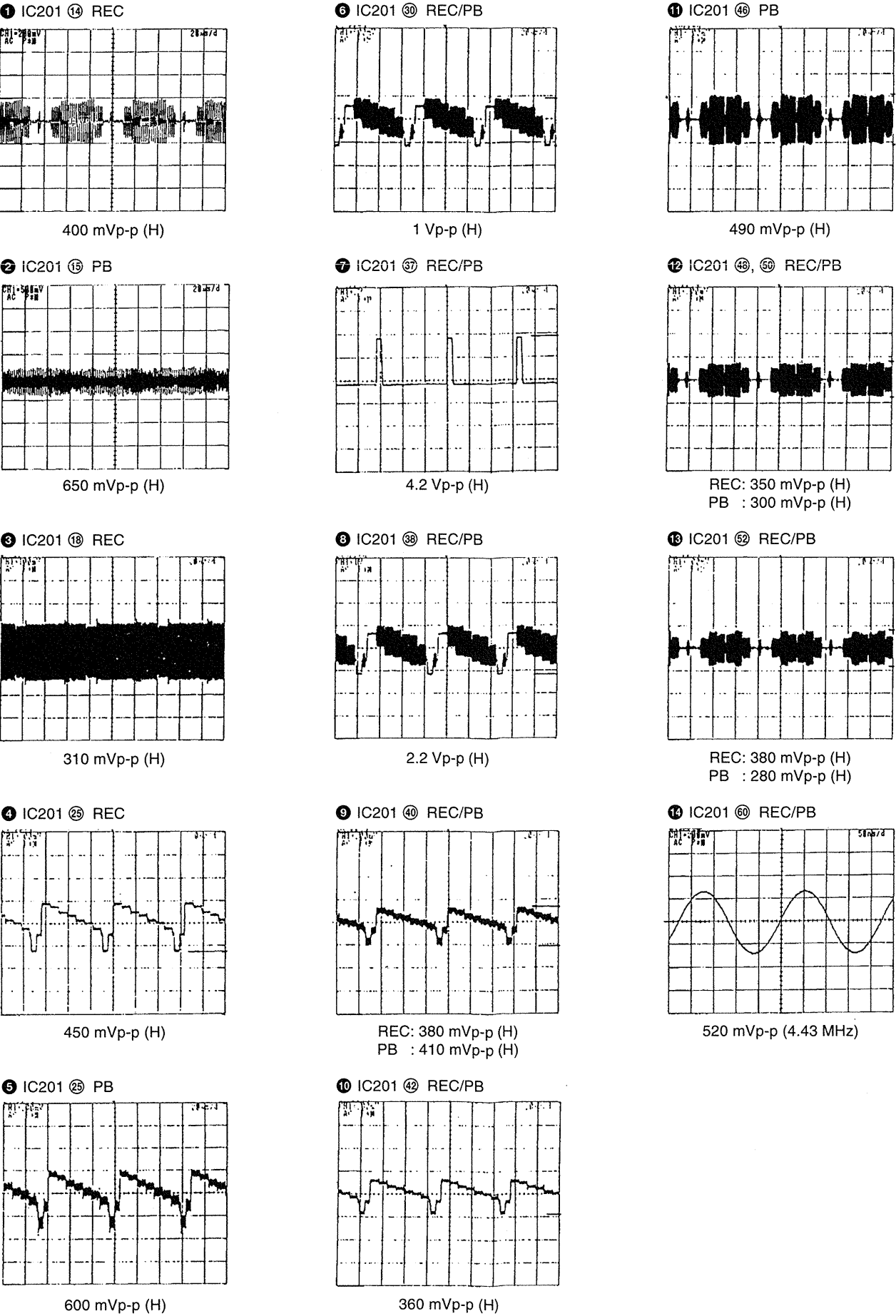
- Signal path

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB			

MA-314 (VIDEO, AUDIO) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.
- Ref. No.: MA-314 board; 1,000 series -



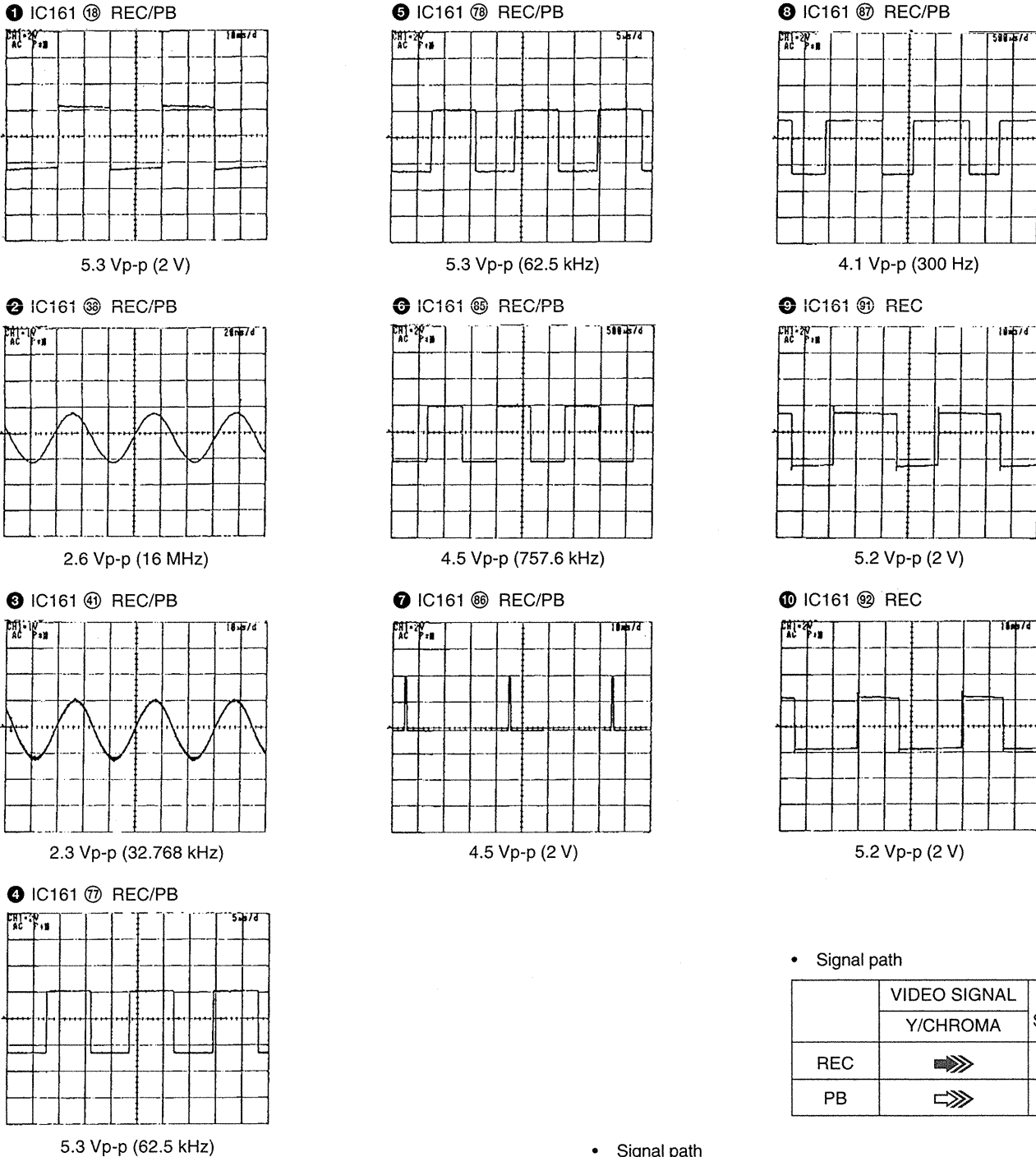
• Waveforms



• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	➡	➡	➡	➡

Waveforms



Signal path

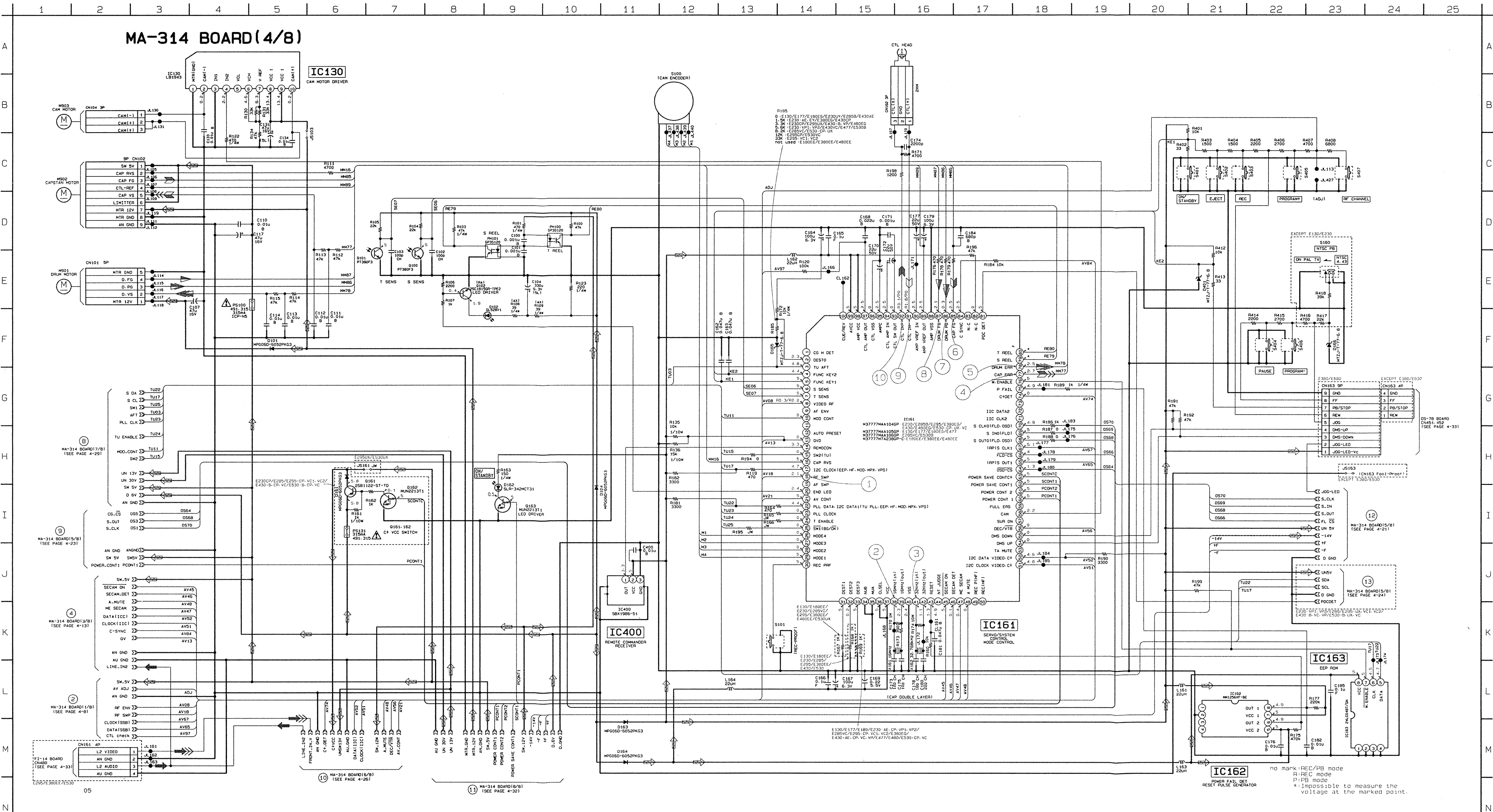
	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC	➡➡➡	➡➡➡
PB	➡➡➡	➡➡➡

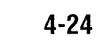
Signal path

	REC	REC/PB	PB
Drum speed servo		➡➡➡	
Drum phase servo		➡➡➡	
Drum servo (speed and phase)		➡➡➡	
Capstan speed servo		➡➡➡	
Capstan servo (speed and phase)		➡➡➡	
Ref. signal	➡➡➡		➡➡➡

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

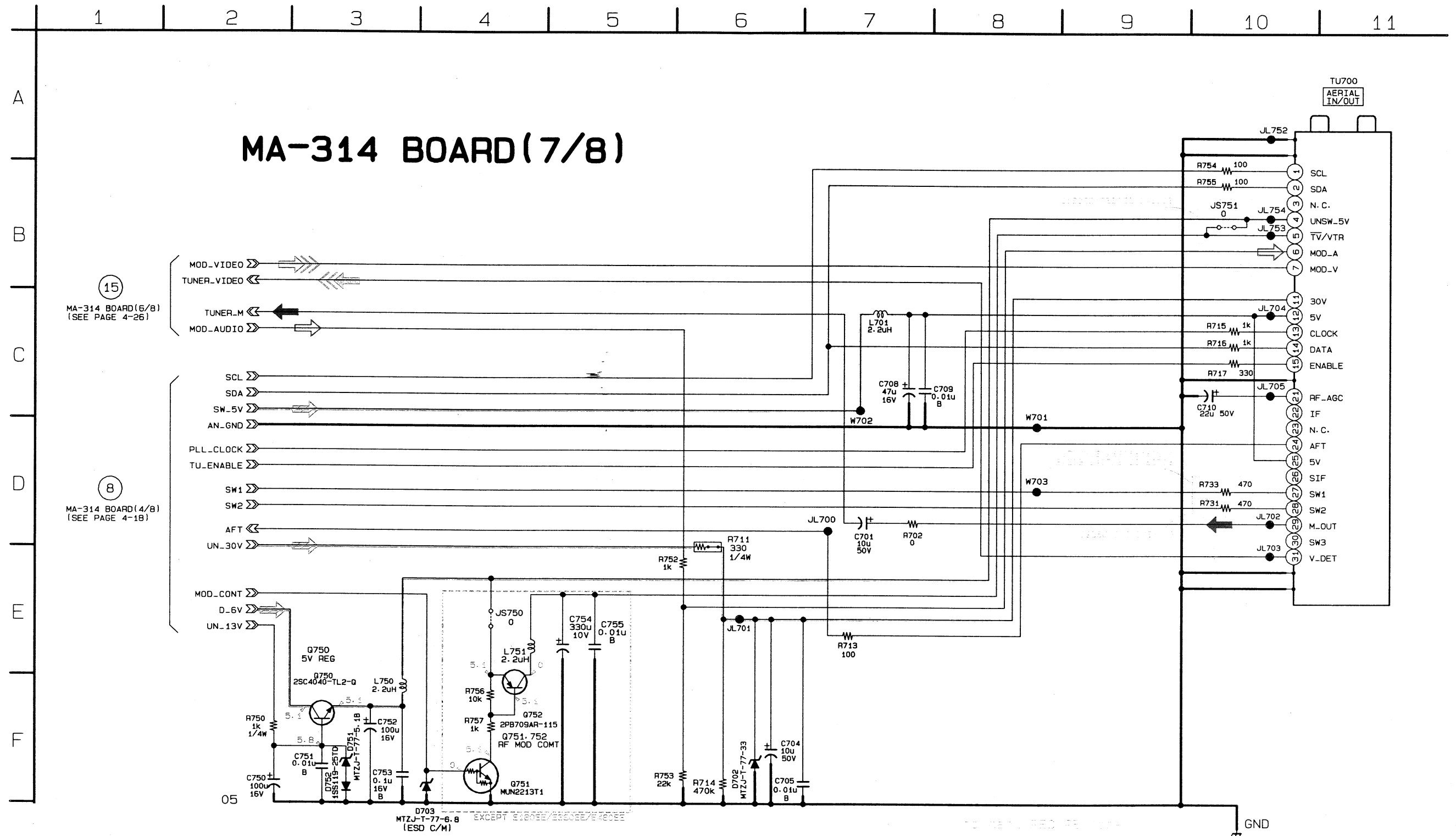
MA-314 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.
– Ref. No.: MA-314 board; 1,000 series –





MA-314 (TUNER) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.

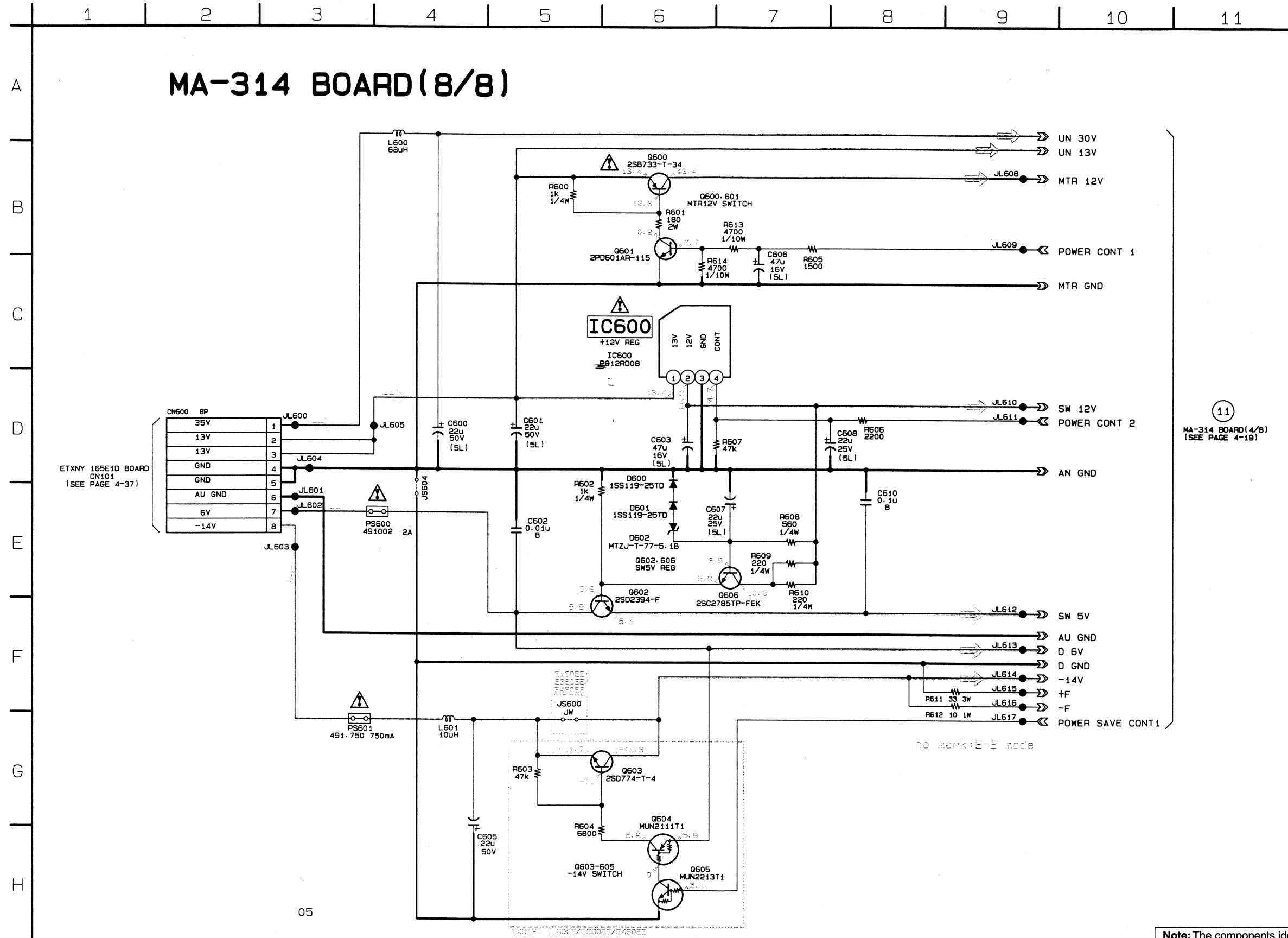
– Ref. No.: MA-314 board; 1,000 series –



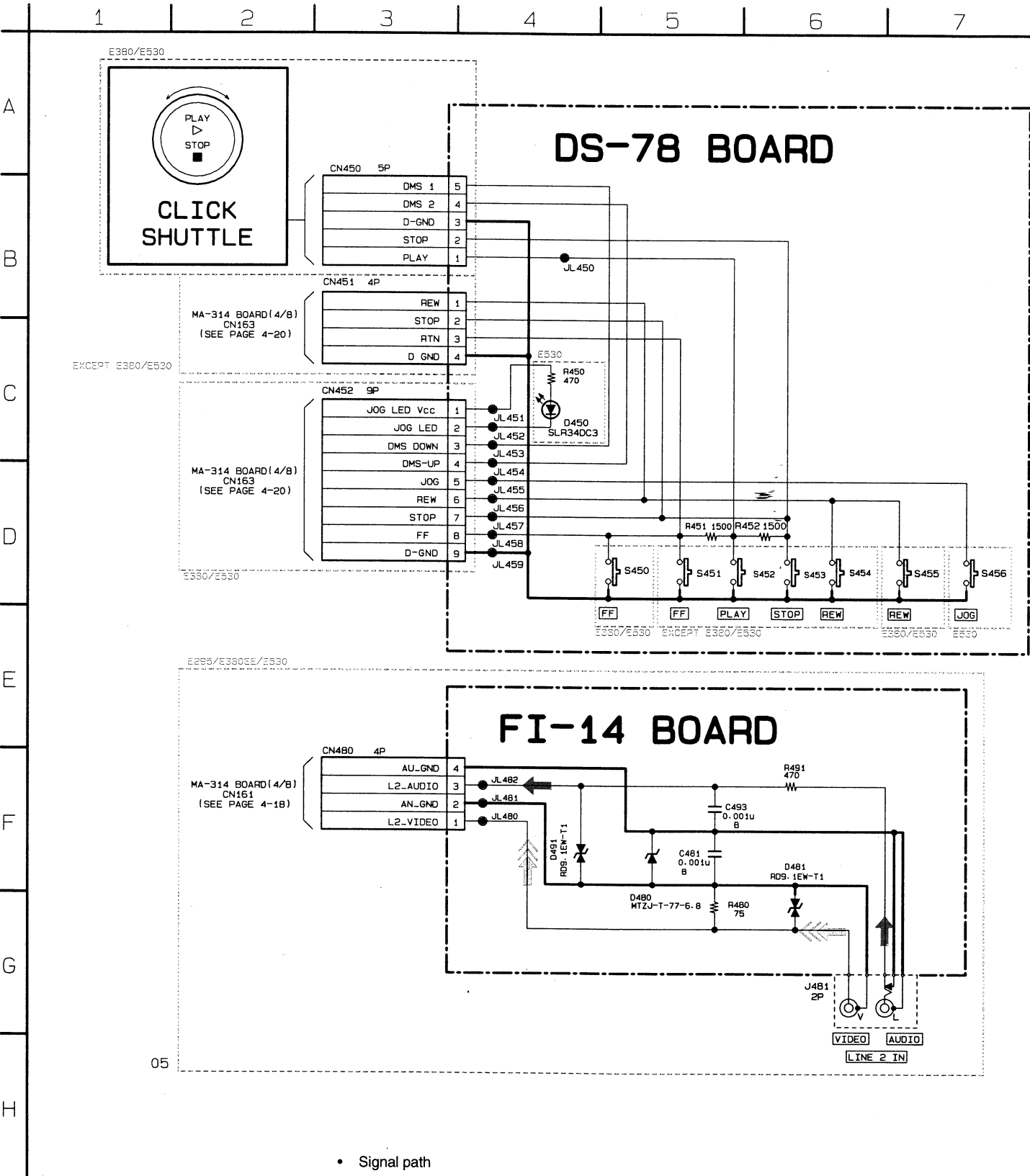
- Signal path

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC		
PB		

MA-314 (POWER SUPPLY) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.
– Ref. No.: MA-314 board; 1,000 series –



DS-78 (MODE CONTROL), FI-14 (FRONT IN) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM
- Ref. No.: DS-78 board, FI-14 board; 1,000 series -

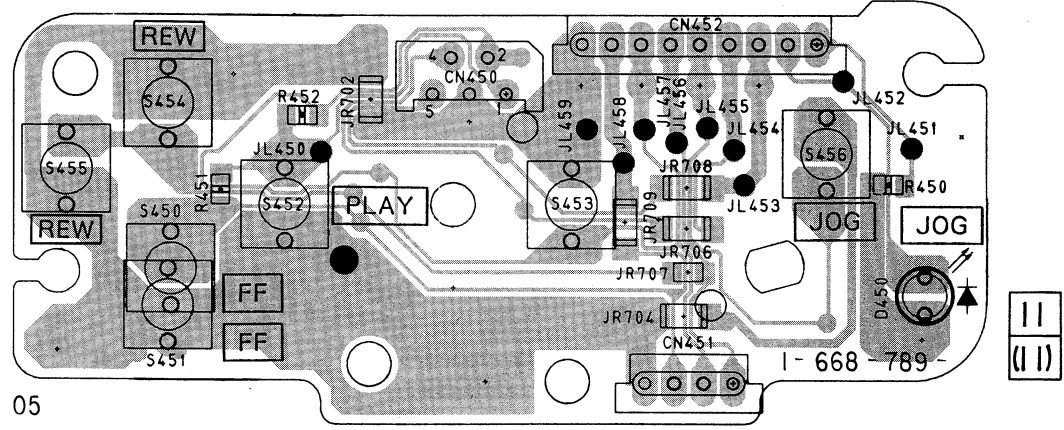


• Signal path

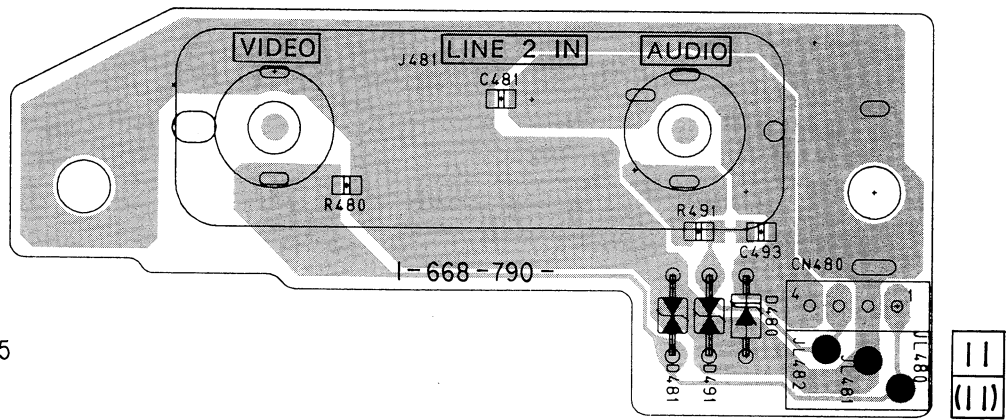
	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC	→	→
PB	→	→

There are few cases that the part isn't mounted in this model is printed on this diagram.

DS-78 BOARD



FI-14 BOARD



MA-314
(HEAD AMP, VIDEO, AUDIO, IO,
SERVO/SYSTEM CONTROL, TUNER)

DRUM
ASSEMBLY

FI-14
(E295/E380: EE/E530)
(FRONT IN)

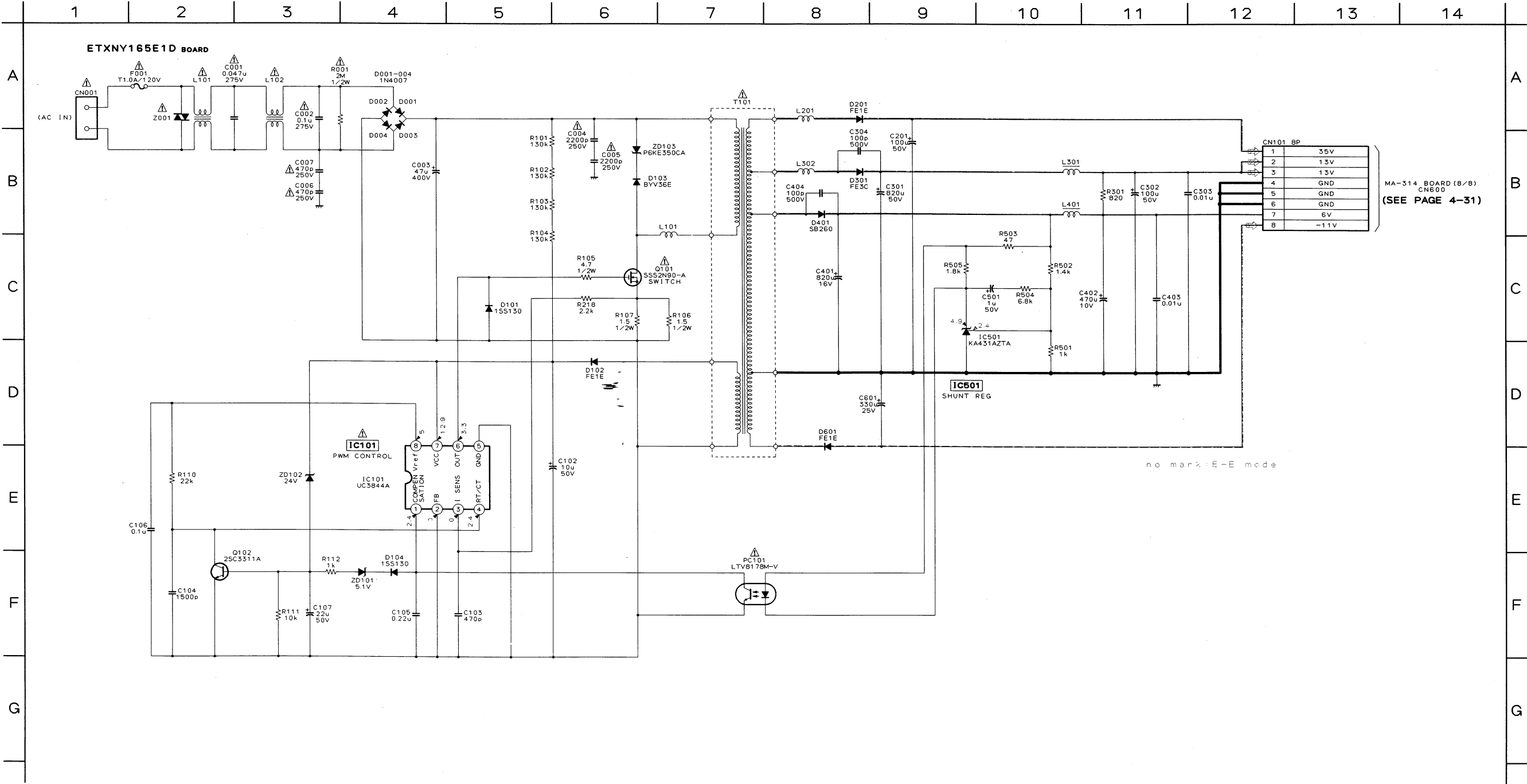
ETXNY 165E1D
(POWER SUPPLY)

DS-78
(MODE CONTROL)

MODE CONTROL, FRONT IN
DS-78, FI-14

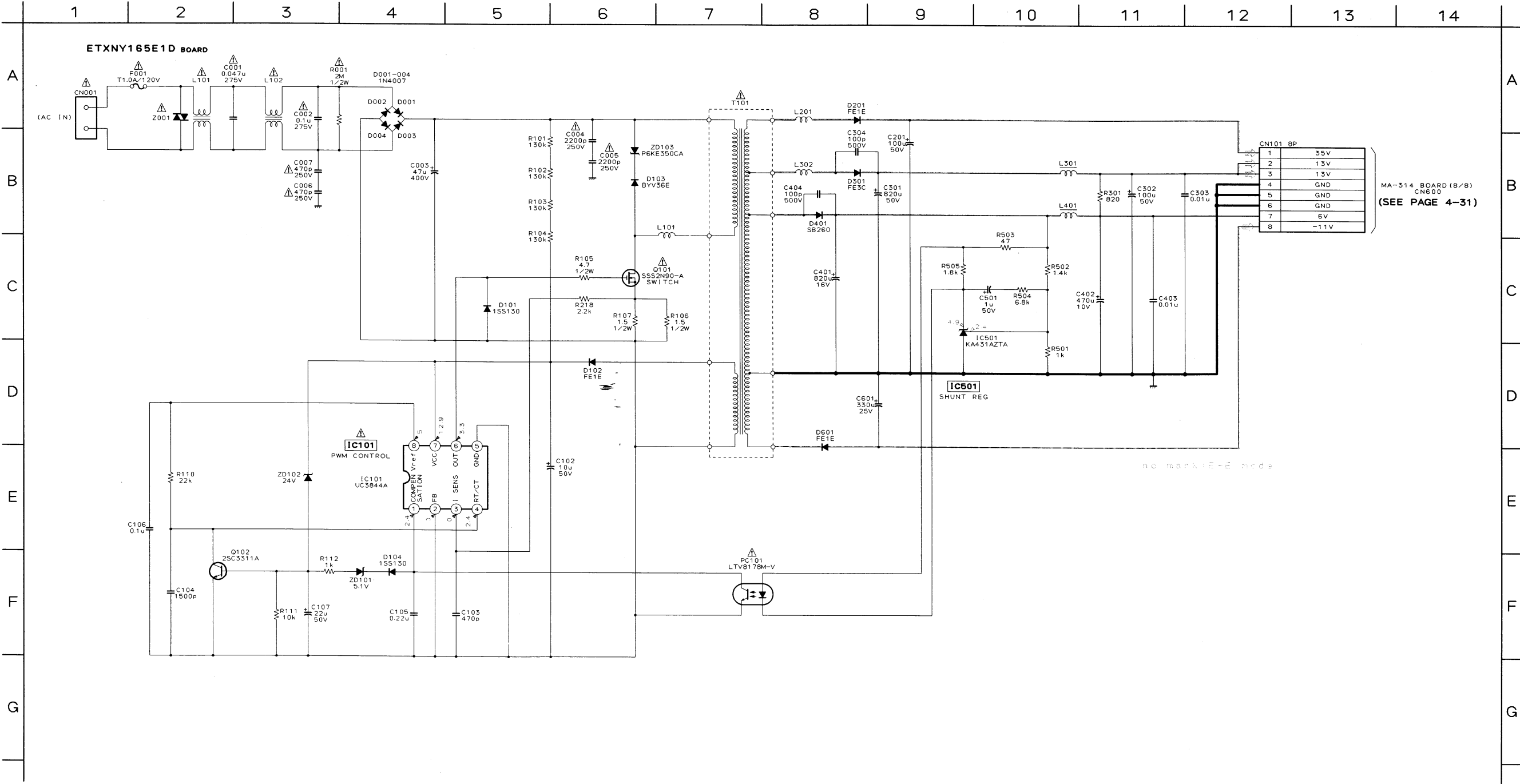
ETXNY 165E1D (POWER SUPPLY) SCHEMATIC DIAGRAM

- Ref. No.: ETXNY 165ED board; 2,000 series -



Note: The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

ETXNY 165E1D (POWER SUPPLY) SCHEMATIC DIAGRAM
- Ref. No.: ETXNY 165ED board; 2,000 series -



Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

SECTION 5

INTERFACE, IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL – VIDEO/RP BLOCK INTERFACE (MA-314 BOARD IC161)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOADING	PB	REC	REC • PAUSE
RF SWP	MA-314 IC161 ^⑩	O	*1	*1	*1	*1	*1	*1
QVD	MA-314 IC161 ^⑬	O	L	L	L	*2	L	L
REC P	MA-314 IC161 ^{④⑨}	O	L	L	L	L	L	H
C SYNC	MA-314 IC161 ^{④⑨}	I	*3	*3	*3	*3	*3	*3

*1. Synchronized with drum rotation. 25 Hz 50% duty pulse.

*2. Normally "L". "H" when videl signal is not generated.

*3. Composite sync signal (positive).

5-2. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE (MA-314 BOARD IC161)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE LOADING	TAPE UNLOADING	PB	REC
CTL IN+	MA-314 IC161 ^{②②}	O	*7	*7	*7	*7	*7	*7	*1
DRM PG	MA-314 IC161 ^{③⑨}	I	*3	*3	*3	*3	*3	*3	*3
DRM FG	MA-314 IC161 ^{③⑦}	I	*4	*4	*4	*4	*4	*4	*4
CAP FG	MA-314 IC161 ^{③⑤}	I	H/L	*2	*2	*5	*5	*2	*2
CAP RVS	MA-314 IC161 ^{①⑩}	O	H/L	L	H	L	H	L	L
CAP ERR	MA-314 IC161 ^{⑦⑦}	O	L	*6	*6	*6	*6	*6	*6
DRM ERR	MA-314 IC161 ^{⑦⑨}	O	*6	*6	*6	*6	*6	*6	*6

*1. 25 Hz pulse.

*2. Pulse of period in proportion to tape speed.

*3. 25 Hz "H" pulse.

*4. 300 Hz pulse.

*5. Unstable period pulse.

*6. DC voltage 1~5V.

*7. Hi-Z (2.5V).

5-3. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE (MA-314 BOARD IC161)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREAD- ING	TAPE UNTHREAD- ING	STOP	FF	REW	PB	REC
CAM	MA-314 IC161⑤	O	M	H/M	L/M	H/M	L/M	M	M	M	M	M
MODE 1	MA-314 IC161②	I	H	–	–	L	L	H	H	H	H	H
MODE 2	MA-314 IC161②	I	H	–	–	L	L	H	H	H	L	L
MODE 3	MA-314 IC161⑦	I	L	–	–	H	H	H	L	L	L	L
MODE 4	MA-314 IC161②	I	L	–	–	H	H	L	H	H	L	L
REC PRF	MA-314 IC161③	I	L	*1	*1	*1	*1	*1	*1	*1	*1	*1
T REEL	MA-314 IC161⑧	I	H/L	H/L	H/L	H/L	H/L	H/L	*2	*2	*2	*2
S REEL	MA-314 IC161⑨	I	H/L	H/L	H/L	*2	*2	H/L	*2	*2	*2	*2
END LED	MA-314 IC161⑩	O	L	*3	*3	*3	*3	*3	*3	*3	*3	*3
T SENS	MA-314 IC161⑦	I	*3	*3	*3	*4	*4	*4	*4	*4	*4	*4
S SENS	MA-314 IC161⑥	I	*3	*3	*3	*4	*4	*4	*4	*4	*4	*4

*1. "L" when erasing protection tab is bent. "H" when not bent.
*2. Pulse of period in proportion to reel rotating speed.
*3. Approx. 2 msec period "H" pulse.
*4. Normally "L" .2 msec period "H" pulse when tape top or tape end is detected.
*5. Hi-Z

5-4. SYSTEM CONTROL – SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-314 BOARD IC161)

Signal	Pin No.	I/O	I/O level
RESET	MA-314 IC161④	I	Normally "H", "L" when service interruption is detected or restored.
I2C DATA VIDEO	MA-314 IC161⑤	O	Serial communication data to video microprocessor.
I2C CLOCK VIDEO	MA-314 IC161⑥	O	Serial communication clock with video microprocessor.
PLL DATA I2C DATA 1	MA-314 IC161②	O	Serial communication data to audio microprocessor.
I2C CLOCK 1	MA-314 IC161⑦	O	Serial communication clock with audio microprocessor.
(RP) S OUT 1	MA-314 IC161⑥	O	Serial communication data to RP microprocessor.
(RP) S CLK 1	MA-314 IC161⑦	O	Serial communication clock to RP microprocessor.

5-5. SYSTEM CONTROL – AUDIO BLOCK INTERFACE (MA-314 BOARD IC161)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOADING	PB	REC	REC • PAUSE
A MUTE	MA-314 IC161④	O	L	L	L	L	L	H

5-6. SERVO/SYSTEM/TIMER/TUNER CONTROL MICROPROCESSOR PIN FUNCTION (MA-314 BOARD IC161)

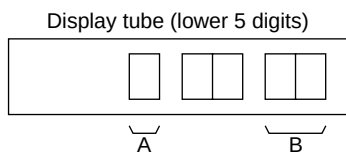
Pin No.	Pin name	I/O	Function
1	N.C.	–	Not used
2	DEST 0	I	Destination judgement 0
3	TU AFT	I	Tuner analog auto fine tuning input
4	FUNK KEY 2	I	9 KEY input
5	FUNK KEY 1	I	9 KEY input
6	S SENS	I	Tape end sensor input
7	T SENS	I	Tape top sensor input
8	VIDEO RF	I	Video RF input
9	N.C.	–	Not used
10	MOD CONT	O	RF MOD power control
11	N.C.	–	Not used
12	N.C.	–	Not used
13	QVD	O	Quasi VD pulse output
14	REMOCON	I	Remote control signal input
15	SW2	O	Tuner system select
16	CAP RVS	O	Capstan reverse signal output
17	I ² C CLOK	O	I ² C clock (EEPROM, MOD, MPX, VPS)
18	RF SWP	O	RF switching pulse output
19	N.C.	–	Not used
20	END LED	O	LED output to tape top and tape end sensor
21	AV CONT	O	Euro 21 pin control
22	PLL DATA (I ² C DATA 1)	O	Tuner PLL data/I ² C data (EEPROM, MOD, MPX, VPS)
23	PLL CLOCK	O	Tuner PLL clock output
24	T ENABLE	O	Tuner enable signal output
25	SW1	O	Tuner system select
26	MODE 4	I	CAM encoder input 4
27	MODE 3	I	CAM encoder input 3
28	MODE 2	I	CAM encoder input 2
29	MODE 1	I	CAM encoder input 1
30	REC PRF	I	Cassette erasing protect tab detect switch input
31	DEST 1	I	Destination judgment 1
32	DEST 2	I	Destination judgment 2
33	DEST 3	I	Destination judgment 3
34	NUB	I	Fixed to GND
35	NUA	I	Fixed to GND
36	CLKSEL	I	Fixed to 5V
37	VCC	–	5V
38	16MHz (in)	I	16MHz
39	16MHz (out)	O	16MHz
40	VSS	–	GND
41	32KHz (in)	I	32KHz
42	32KHz (out)	O	32KHz
43	RESET	I	RESET signal input
44	N.C.	–	Not used
45	SECAM ON	O	"L" output when SECAM mode
46	SECAM DET	I	SECAM detect signal input
47	ME SECAM	I	MESECAM judgement input
48	A MUTE	O	Audio mute signal
49	N.C.	–	Not used
50	N.C.	–	Not used

Pin No.	Pin name	I/O	Function
51	I ² C CLOCK VIDEO, C+	O	I ² C clock (VIDEO, C+)
52	I ² C DATA VIDEO, C+	O	I ² C data (VIDEO, C+)
53	TA MUTE	O	Tuner audio mute signal output
54	DMS UP	I	Dual mode shuttle control signal input
55	DMS DOWN	I	Dual mode shuttle control signal input
56	DEC/VTR	O	Decoder/VTR select
57	SUR ON	O	Surround control
58	CAM	O	CAM motor control
59	N.C.	–	Not used
60	POWER CONT 1	O	MTR 12V control
61	POWER CONT 2	O	SW 12V control
62	POWER SAVE CONT 1	O	–14V control
63	POWER SAVE CONT C+	O	C+ VCC control
64	OSD-CS	O	OSD chip select signal output
65	S OUT 1	O	Serial communication signal (RP)
66	FLD-CS	O	FL driver chip select signal output
67	S CLK 1	O	Serial communication (RP)
68	S OUT 0	O	Serial communication signal output (FLD, OSD)
69	S IN 0	I	Serial communication signal input (FLD)
70	S CLK 0	O	Serial communication clock output (FLD, OSD)
71	N.C.	–	Not used
72	N.C.	–	Not used
73	N.C.	–	Not used
74	C+DET	I	CANAL + signal input
75	P FAIL	I	Power failure detection input
76	W. ENABLE	O	EEPROM write protect
77	CAP ERR	O	Capstan error output
78	DURM ERR	O	Drum error output
79	S REEL	I	Supply reel sensor input
80	T REEL	I	Take-up reel sensor input
81	PDCDET	I	PDC/VPS receiving signal input
82	CHECK	I	Check signal input
83	N.C.	–	Not used
84	C SYNC	I	Composite sync input
85	CAP FG	I	Capstan FG input
86	DURM PG	I	Drum PG input
87	DURM FG	I	Drum FG input
88	AMP VSS	–	CTL amplifier GND
89	AMP VREF OUT	O	CTL amplifier
90	AMP VPEF IN	I	CTL amplifier
91	CTL IN–	I/O	CTL singal (–) input/output
92	CTL IN+	I/O	CTL singal (+) input/output
93	CTL SW OUT	O	CTL switch output
94	CTL AMP IN	I	CTL amplifier input
95	AMPC	I	CTL amplifier
96	CTL VSS	–	CTL amplifier GND
97	CTL AMP OUT	O	CTL amplifier output
98	AMP VCC	–	CTL amplifier 5V
99	A VCC	–	Analog 5V
100	N.C.	–	Not used

SECTION 6

ERROR CODES

This set displays an error code, and a mode code in case of error on the display tube, if the operation stopped by error. The following provides description concerned.



A: Error code Table 6-1

B: Mode code in case of error Table 6-2

These codes are displayed at lower 5-digit positions of display tube.

In this case, “ : ” between digits is not displayed.

Table 6-1. Error Codes

Code	Description
0	NO ERROR
1	CAM ENCODER ERROR, LOAD DIRECTION
2	CAM ENCODER ERROR, UNLOAD DIRECTION
3	T REEL ERROR
4	S REEL ERROR
5	CAPSTAN ERROR
6	DRUM ERROR
7	INITIALIZE ERROR
8	CASSETTE UNLOADING ERROR
9	RESERVED

Table 6-2. Mode Codes in Case of Error

Code	Description
0	POWER-ON EJECT
1	POWER-ON INITIAL
2	POWER-OFF EJECT
3	POWER-OFF STOP
4	FF
5	REW
6	REC
7	REC-PAUSE
8	POWER-ON STOP
9	PB
10	FWD R1
11	FWD R2
12	CUE
13	PB-PAUSE
14	RVS-PAUSE
15	RVS R1
16	RVS R2
17	REV
18	POWER-OFF INITIAL
19	MECHA ERROR (POWER OFF)
20	REW PLAY
21	CAS LOADING
22	TAPE LOADING
23	POWER-OFF LOADING
24	MECHA ERROR (POWER ON)
25	POWER-ON EJECT INITIAL
26	POWER-OFF EJECT INITIAL
27	APC REC
28	CAS LOADING (NO AUTO PB CHECK)

SECTION 7 ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for Adjustment on page 7-6.

7-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT VI.

7-2. ELECTRICAL ADJUSTMENTS

2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

2-1-1. Instruments to be Used.

- 1) Color TV
- 2) Oscilloscope 1 or 2 phenomena, band more than 30 MHz, delay mode, as provided.
- 3) Frequency counter (min. 8 digits)
- 4) PAL pattern generator
- 5) Digital voltmeter
- 6) Audio level meter
- 7) Audio noise meter
- 8) Audio generator
- 9) Modulation Analyzer
- 10) Distortion factor meter
- 11) Attenuator
- 12) Alignmeter tape
Part Code: 8-192-605-36 (KRV-51P)

2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

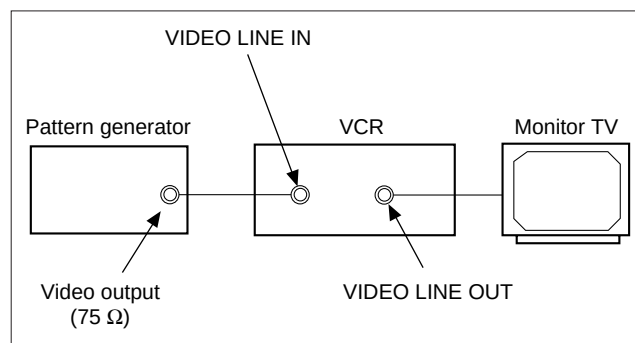


Fig. 7-2-1

2-1-3. Set-up of Adjutment

In this adjustment, PAL pattern generator is connected with LINE input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal PAL signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30 : 0.66. Fig. 7-2-2. shows video signals (color bars) used in adjusting the video section.

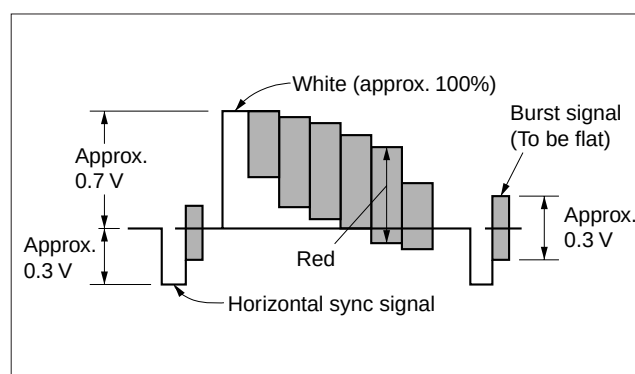


Fig. 7-2-2.

2-1-4. Alignment Tape

[Alignment Tape (KRV-51P)]

	Mode	Time	Video signal	Audio signal (HiFi/Normal)
1	SP	Seven minutes	Color bar	400 Hz
2		Three minutes	Monoscope	400 Hz
3	EP	Seven minutes	Color bar	400 Hz
4		Three minutes	Monoscope	400 Hz

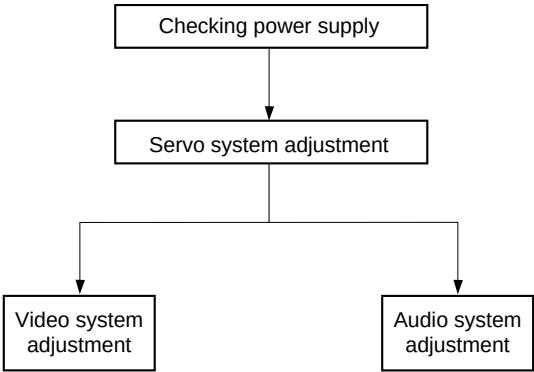
2-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	LINE IN	: phono jacks
	EURO-AV	: 21-pin (Pin ⑳) 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio inputs	LINE IN	: phono jack
	EURO-AV	: 21-pin (Pin ㉑ and ㉒) 47 kΩ, -75 dBs (0 dBs = 0.775 Vrms) More than 10 kΩ, -4 dBs
Video outputs	LINE OUT	: phono jack
	EURO-AV	: 21-pin (Pin ㉓) 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio outputs	LINE OUT	: phono jacks
		-7.5 dBs at load
		impedance 47 kΩ
		Output impedance : less than 10 kΩ
	EURO-AV	: 21-pin (Pin ㉔ and ㉕)
		Output impedance : less than 1 kΩ
		-4 dBs with 10 kΩ load

2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.



2-2. POWER SUPPLY ADJUSTMENT

2-2-1. Power Supply Check

Mode	E-E
Measuring Instrument	Digital voltmeter
-11.5 V check	
Measurement Point	Pin ⑧ of CN600 (MA-314 board)
Specified Value	11.4 ^{+1.2} _{-0.5} V
D6 V check	
Measurement Point	Pin ⑦ of CN600 (MA-314 board)
Specified Value	5.9 ± 0.2 V
+13 V check	
Measurement Point	Pin ②, ③ of CN600 (MA-314 board)
Specified Value	13.75 ± 0.55 V
+35 V check	
Measurement Point	Pin ① of CN600 (MA-314 board)
Specified Value	35 ± 3.5 V

Checking Method:

- 1) Confirm that each voltage meets its specified value.

2-3. SERVO SYSTEM Adjustment

2-3-1. RF Switching Position Adjustment (MA-314 Board)

Purpose:

Adjust the interval between A ch and B ch of tape playback output.

Improve the interchangeability with other tapes and sets.

When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement Point	CH1: VIDEO LINE OUT CH2: Pin ② of CN262 (RF SWP)
Measuring Instrument	Oscilloscope
Specified Value	$6.5 \pm 0.5 \text{ H}$ ($416 \pm 32 \mu\text{sec}$)

Adjusting Method:

- 1) Connect MA-314 board Pin ⑤ of CN262 to the GND for about 1 second to activate the RF switching position adjustment mode.
- 2) Check appear "A P" on FL display.
- 3) Using the channel + and - buttons, adjust to $416 \pm 32 \mu\text{sec}$ ($6.5 \pm 0.5 \text{ H}$).
- 4) Press the pause button.

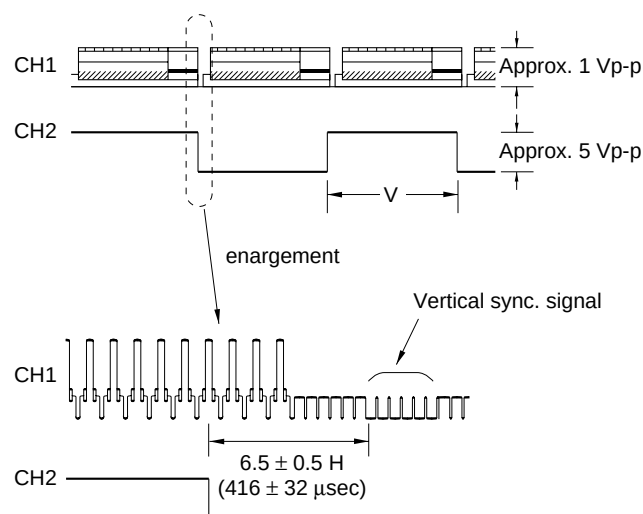


Fig. 7-2-3.

2-4. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following sequence as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode.

Make sure that sync. and color burst signals meet requirements specified at set up of adjustment shown in Fig. 7-2-1.

[Adjustment Sequence]

2-4-1. Playback Y Signal Level Check

2-4-2. Recording Chroma Level Check

2-4-3. Sync. AGC Check

2-4-4. X'tal Oscillation Frequency Check

2-4-1. Playback Y Signal Level Check (MA-314 Board)

Purpose:

Confirm that the playback Y signal level is correct.

Mode	PB
Signal	Alignment tape SP color bar
Measurement point	Pin ③ IC201
Measurement equipment	Oscilloscope
Specified value	$2.10 \pm 0.18 \text{ Vp-p}$

Confirmation Method:

- 1) Confirm that the play Y level is $2.10 \pm 0.18 \text{ Vp-p}$.

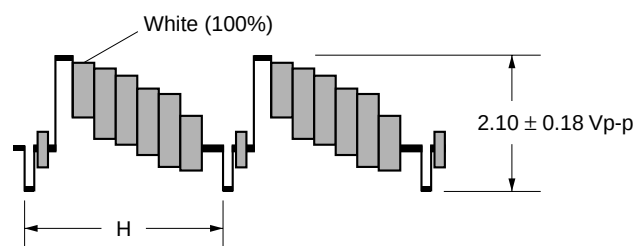


Fig. 7-2-4.

2-4-2. Recording Chroma Level Check
(MA-314 Board)

Purpose:
Check the chroma signal level after passing through the Y/C separating circuit.
If shifted, the image is roughened and another color may appear on the edges.

Mode	E-E
Signal	Color bar
Measurement point	Pin ⑭ of IC201
Measurement equipment	Oscilloscope
Specified value	$500 \pm 80 \text{ mVp-p}$

Confirmation Method:
1) Confirm that the record chroma level is $500 \pm 80 \text{ mVp-p}$.

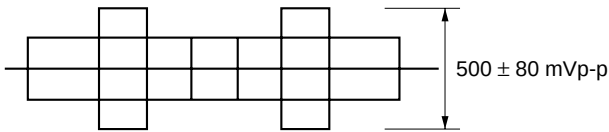


Fig. 7-2-5.

2-4-3. Sync. AGC Check
(MA-314 Board)

Purpose:
Confirm that the video level is correct.

Mode	E-E
Signal	Color bar
Measurement point	Pin ⑳ IC201
Measurement equipment	Oscilloscope
Specified value	$2.10 \pm 0.14 \text{ Vp-p}$

Note: Video output terminal must be terminated at 75Ω .

Confirmation Method:
1) Confirm that the sync. AGC level is $2.10 \pm 0.14 \text{ Vp-p}$.

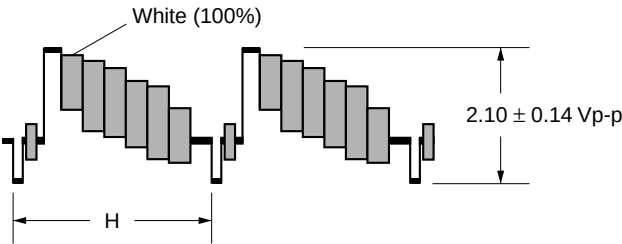


Fig. 7-2-6.

2-4-4. X'tal Oscillation Frequency Check
(MA-314)

Purpose:
Confirm that the fsc is correct.

Mode	PB
Signal	Alignment tape SP color bar
Measurement point	Pin ⑤ of IC201
Measurement equipment	Frequency counter, Oscilloscope
Specified value	$4,433,619 \pm 96 \text{ Hz}$

Note: Connect the frequency counter through a probe of high input impedance (about $10 \text{ M}\Omega$) and low capacity (10 pF or less).

Confirmation Method:
1) Confirm that the frequency is $4,433,619 \pm 96 \text{ Hz}$
2) Confirm that the amplitude is $500 \pm 200 \text{ mVp-p}$.

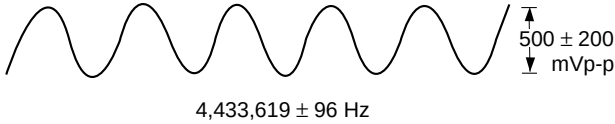


Fig. 7-2-7.

2-5. AUDIO SYSTEM ADJUSTMENTS

- Adjust both Lch and Rch.

[Connection]

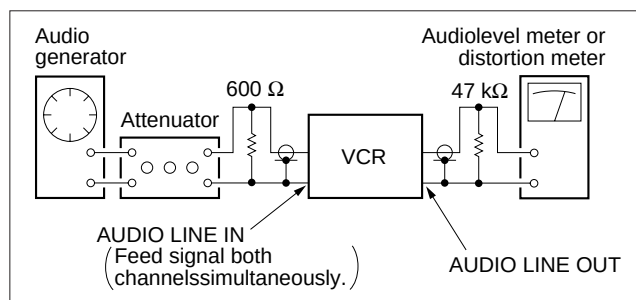


Fig. 7-2-8.

2-5-1. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Set AUDIO MONITOR to normal.

[Adjustment Sequence]

- ACE Head Adjustment
- E-E Output Level Check
- Frequency Response Check
- Overall Level Characteristic and Distortion Factor Check
- Overall S/N Check

- ACE Head Adjustment
Refer to the service manual of VHS MECHANICAL ADJUSTMENT IV.

2. E-E Output Level Check

Purpose:

Confirm that the output level against the reference input is within the specification.

Mode	E-E
Signal	L, R: 400 Hz, -6.3 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	-6.3 ± 2 dBs

Confirmation Method:

- Simultaneously input a signal of 400 Hz, -6.3 dBs to both L and R channels of Audio Line Input.
- Confirm that the audio output level is -6.3 ± 2 dBs.

3. Frequency Response Check

Purpose:

Confirm that the frequency characteristic is within the specification.

Mode	REC and PB (SP mode)
Signal	400 Hz, -26.3 dBs 7 kHz, -26.3 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	0 ± 3 dB

Tape path adjustment must have been completed.

Confirmation Method:

- Supply a signal of 400 Hz, -26.3 dBs to both L and R channels of Audio Line Input.
- Connect the audio level meter to the Audio Line Output.
- Adjust the attenuator so that the audio level meter will indicate -26.3 dBs.
- Make recording in the SP mode.
- Set an audio line input signal to 7 kHz and make recording.
- Playback a recorded portion, and measure output levels at 400 Hz and 7 kHz.
- Confirm that the 7 kHz playback output level within a range of the 400 Hz playback output level 0 ± 3 dB.

4. Overall Level Characteristic and Distortion Factor Check

Purpose:

Check the record level, play level, and distortion factor against the reference input.

Mode	REC and PB (SP mode)
Signal	400 Hz, -6.3 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter and distortion factor meter
Specified value	Playback level: -6.3 ± 3 dBs Distortion factor: 4% or less

Confirmation Method:

- Supply an audio signal of 400 Hz, -6.3 dBs simultaneously to both L and R channels of Audio Line Input.
- Make recording
- Play back a recorded portion.
- Confirm that a playback level is -6.3 ± 3 dBs.
- Confirm that a distortion factor is within 4%.

5. Overall S/N Check

Purpose:

Confirm that the S/N is within the specification.

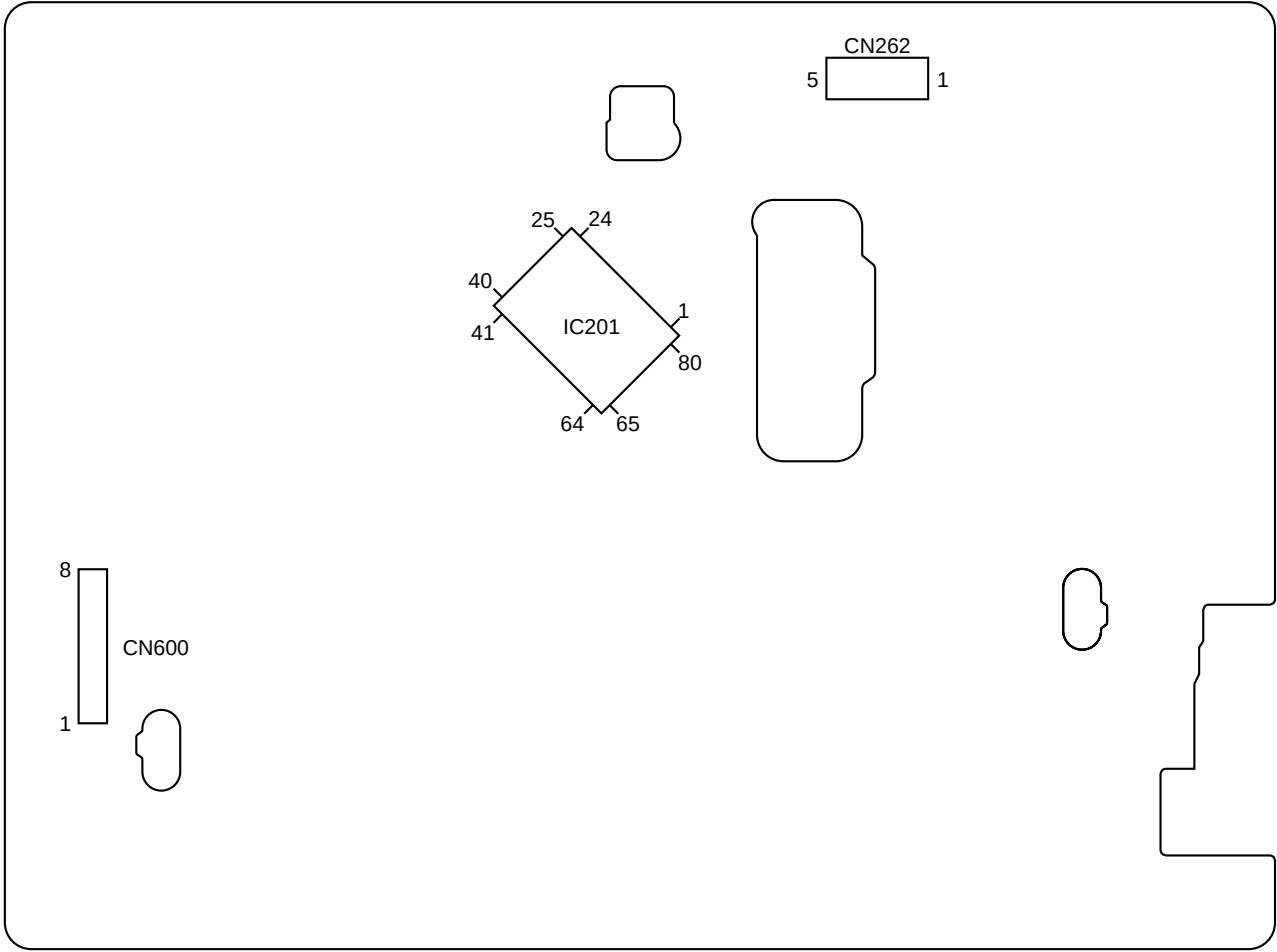
Mode	REC and PB (SP mode)
Signal	Short
Measurement point	Audio output terminal
Measurement equipment	Audio noise meter
Specified value	-38.0 dBs or less

Confirmation Method:

- Connect both L and R channels of audio line input to the GND.
- Start recording.
- Play the recorded part to confirm that the noise is below -38.0 dBs.

2-6. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

MA-314 BOARD (Side B)



SECTION 8

REPAIR PARTS LIST

8-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

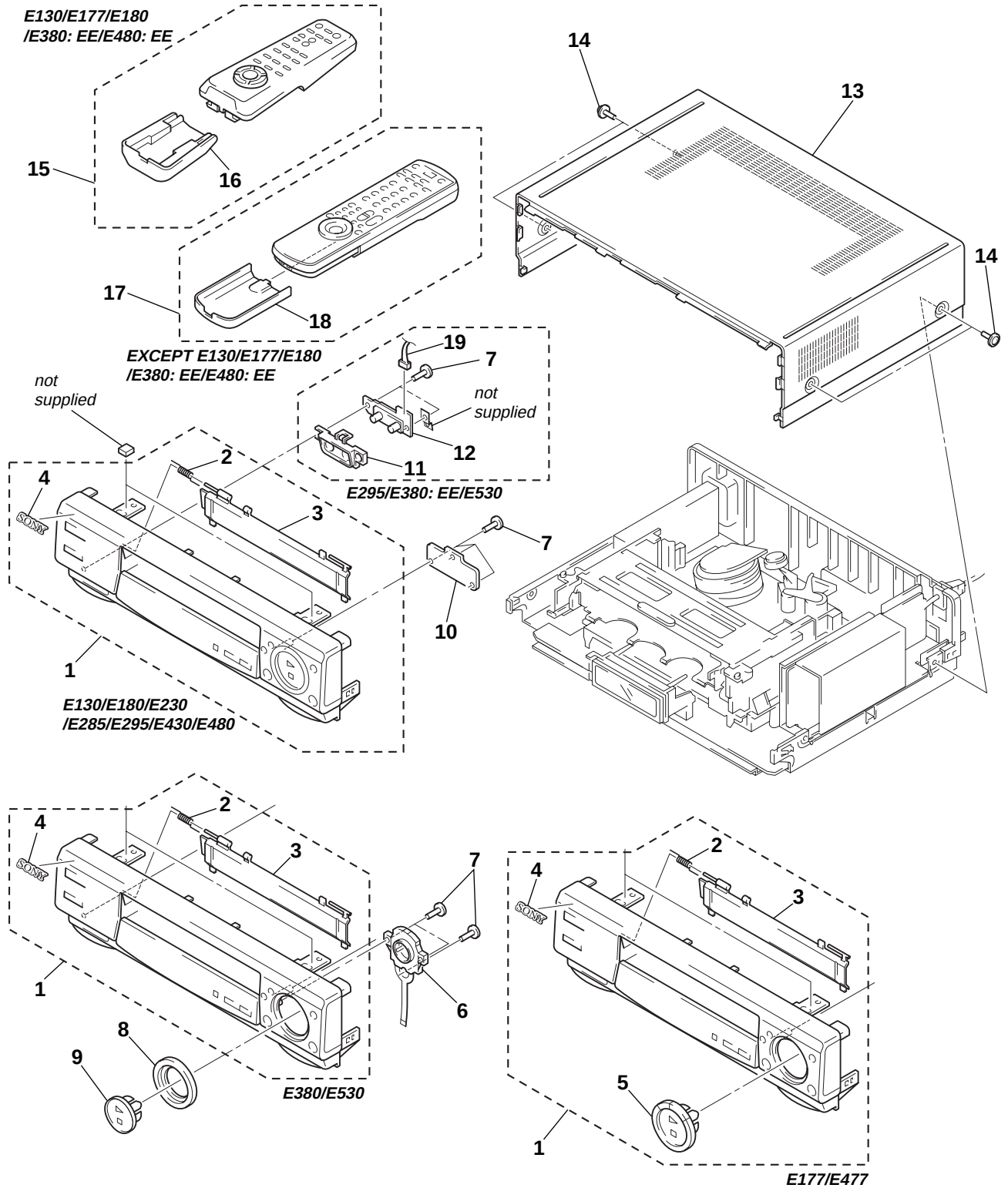
Example:

KNOB, BALANCE (WHITE) . . . (RED)

Parts	Color	Cabinet's Color
1	White	White
2	White	White
3	White	White
4	White	White
5	White	White
6	White	White
7	White	White
8	White	White
9	White	White
10	White	White
11	White	White
12	White	White
13	White	White
14	White	White
15	White	White
16	White	White
17	White	White
18	White	White
19	White	White
20	White	White
21	White	White
22	White	White
23	White	White
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26	White	White
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30	White	White
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33	White	White
34	White	White
35	White	White
36	White	White
37	White	White
38	White	White
39	White	White
40	White	White
41	White	White
42	White	White
43	White	White
44	White	White
45	White	White
46	White	White
47	White	White
48	White	White
49	White	White
50	White	White
51	White	White
52	White	White
53	White	White
54	White	White
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57	White	White
58	White	White
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81	White	White
82	White	White
83	White	White
84	White	White
85	White	White
86	White	White
87	White	White
88	White	White
89	White	White
90	White	White
91	White	White
92	White	White
93	White	White
94	White	White
95	White	White
96	White	White
97	White	White
98	White	White
99	White	White
100	White	White

8-1-1. FRONT PANEL AND CABINET ASSEMBLIES

**E130/E177/E180
/E380: EE/E480: EE**

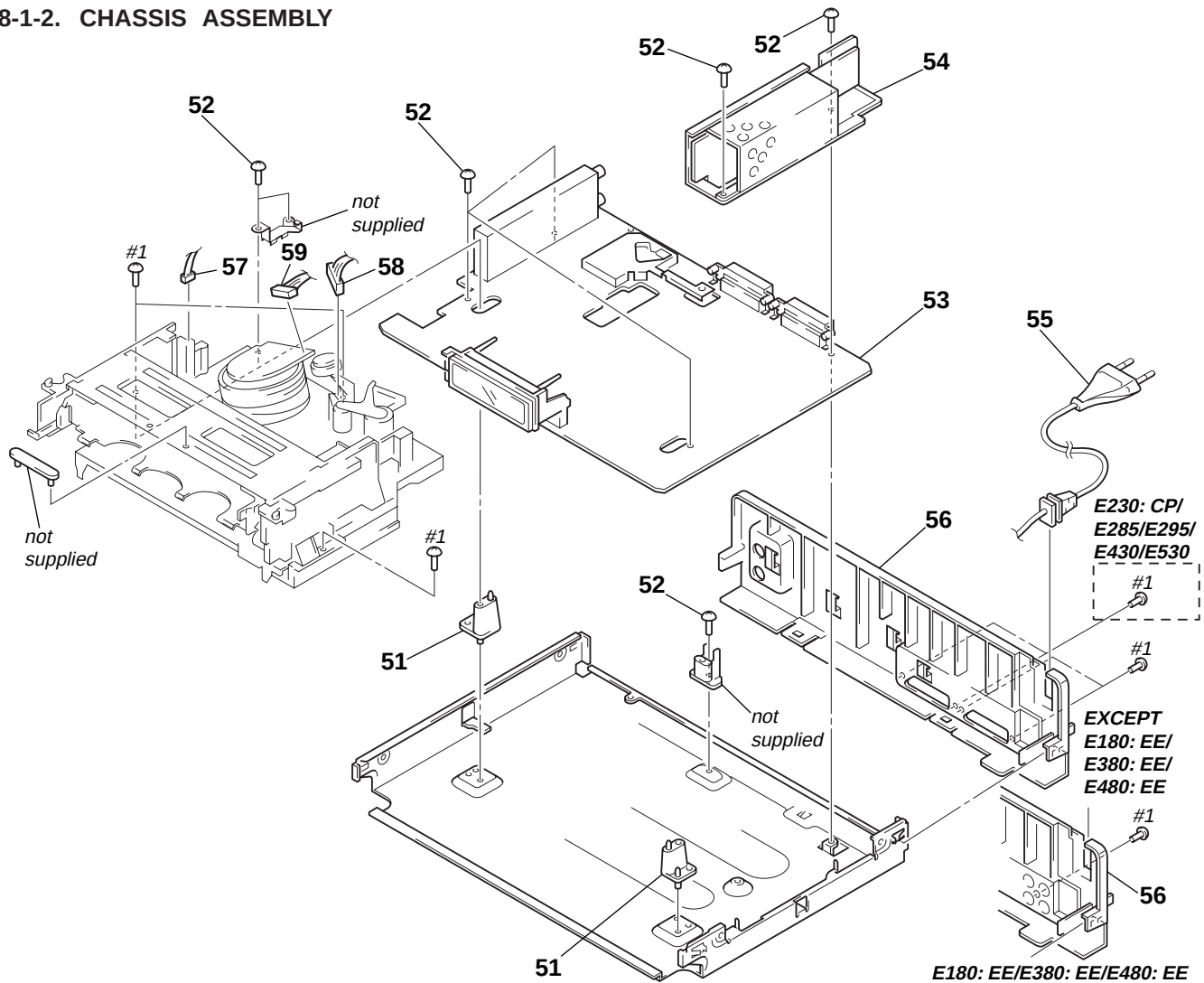


The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

SLV-E130/E177/E180/E230/E285/E295/E380/E430/E477/E480/E530

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	X-3948-017-1	PANEL ASSY, FRONT (E530: UX)		* 10	A-6794-517-A	DS-78 BOARD, COMPLETE (E530)	
1	X-3948-018-1	PANEL ASSY, FRONT (E530: VC)		* 10	A-6794-518-A	DS-78 BOARD, COMPLETE (E380)	
1	X-3948-019-1	PANEL ASSY, FRONT (E530: B)		11	3-979-477-11	COVER, JACK (E295/E380: EE/E530)	
1	X-3948-020-1	PANEL ASSY, FRONT (E530: CP)		* 12	A-6794-507-A	FI-14 BOARD, COMPLETE	(E295/E380: EE/E530)
1	X-3948-022-1	PANEL ASSY, FRONT (E430: VC, VP)		* 13	3-979-384-01	CASE, UPPER (E) (EXCEPT E177/E477)	
1	X-3948-023-1	PANEL ASSY, FRONT (E430: B)		* 13	3-979-384-11	CASE (E), UPPER (E177/E477)	
1	X-3948-024-1	PANEL ASSY, FRONT (E430: AE, CP)		14	3-710-901-11	SCREW (TP3X8), CASE	
1	X-3948-025-1	PANEL ASSY, FRONT (E295: UX)		15	1-475-565-11	COMMANDER, STANDARD (RMT-V220)	(E130/E177/E180/E380: EE)
1	X-3948-026-1	PANEL ASSY, FRONT (E295: CP)		15	1-475-565-31	COMMANDER, STANDARD (RMT-V220B)	(E480: EE)
1	X-3948-027-1	PANEL ASSY, FRONT (E285: B)		16	3-709-322-01	COVER, BATTERY (for RMT-V220/V220B)	(E130/E177/E180/E380: EE/E480: EE)
1	X-3948-028-1	PANEL ASSY, FRONT (E230: EY, UY)		17	1-475-566-11	COMMANDER, STANDARD (RMT-V221)	(E230: AE, CP, VP1, VP2/E285: VC/E380: EG)
1	X-3948-029-1	PANEL ASSY, FRONT (E230: AE, CP)		17	1-475-566-21	COMMANDER, STANDARD (RMT-V221A)	(E230: EY, UY)
1	X-3948-030-1	PANEL ASSY, FRONT (E130)		17	1-475-566-31	COMMANDER, STANDARD (RMT-V221B)	(E285: B)
1	X-3948-031-1	PANEL ASSY, FRONT (E480: EG)		17	1-475-566-41	COMMANDER, STANDARD (RMT-V221C)	(E430: B)
1	X-3948-032-1	PANEL ASSY, FRONT (E380: EG)		17	1-475-566-51	COMMANDER, STANDARD (RMT-V221D)	(E477)
1	X-3948-033-1	PANEL ASSY, FRONT (E180)		17	1-475-566-61	COMMANDER, STANDARD (RMT-V221E)	(E430: AE, CP, VC, VP/E480: EG)
1	X-3948-034-1	PANEL ASSY, FRONT (E480: EE)		17	1-475-567-11	COMMANDER, STANDARD (RMT-V222)	(E295: CP, VC1, VC2/E530: CP, VC)
1	X-3948-035-1	PANEL ASSY, FRONT (E380: EE)		17	1-475-567-21	COMMANDER, STANDARD (RMT-V222A)	(E295: UX/E530: UX)
1	X-3948-039-1	PANEL ASSY, FRONT (E295: VC1, VC2)		17	1-475-567-31	COMMANDER, STANDARD (RMT-V222B)	(E530: B)
1	X-3948-040-1	PANEL ASSY, FRONT (E285: VC)		18	3-709-128-01	COVER, BATTERY	(for EXCEPT RMT-V220 /V220B)
1	X-3948-041-1	PANEL ASSY, FRONT (E230: VP1, VP2)					(E230/E285/E295/E380: EG/
1	X-3948-042-1	PANEL ASSY, FRONT (E477)					E430/E477/E480: EG/E530)
1	X-3948-043-1	PANEL ASSY, FRONT (E177)		19	1-958-318-11	HARNES (FR-64) (E295/E380/E530)	
2	3-953-432-01	SPRING (GE), FL					
3	3-979-467-01	DOOR, CASSETTE (EXCEPT E177/E477)					
3	3-979-467-11	DOOR, CASSETTE (E177/E477)					
4	3-943-995-01	EMBLEM (NO.5), SONY					
5	X-3946-598-1	BUTTON ASSY, FUNCTION (E177/E477)					
6	1-762-844-21	SWITCH, ROTARY (E380/E530)					
7	4-921-277-41	SCREW (B2.6X8), TAPPING, BIND					
8	3-973-077-11	RING, CHANGE SPEED (E380/E530)					
9	3-972-782-11	BUTTON, CENTER (E380/E530: CP, UX, VC)					
9	3-972-782-41	BUTTON, CENTER (E530: B)					
* 10	A-6794-505-A	DS-78 BOARD, COMPLETE	(EXCEPT E380/E530)				

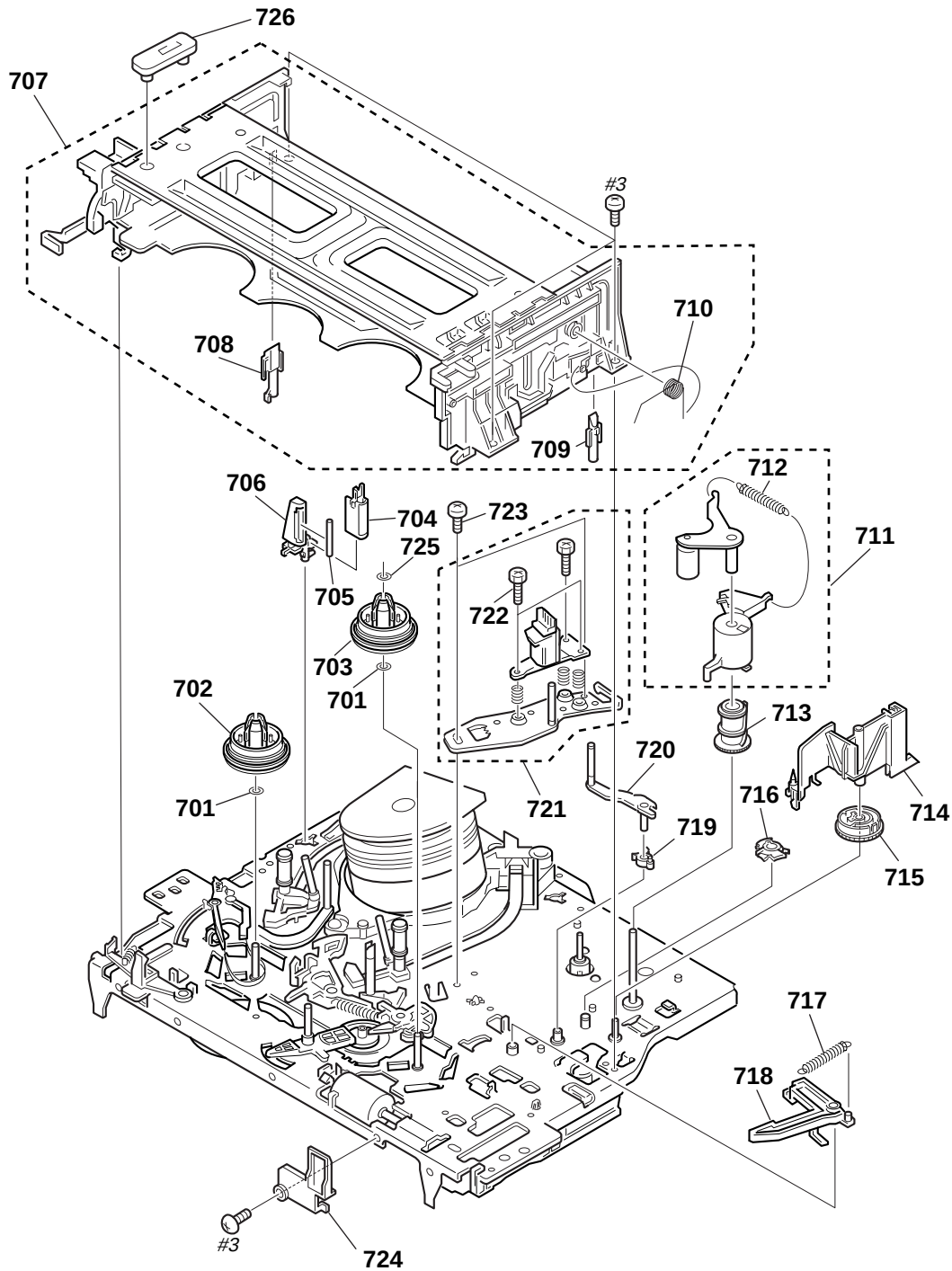
8-1-2. CHASSIS ASSEMBLY



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

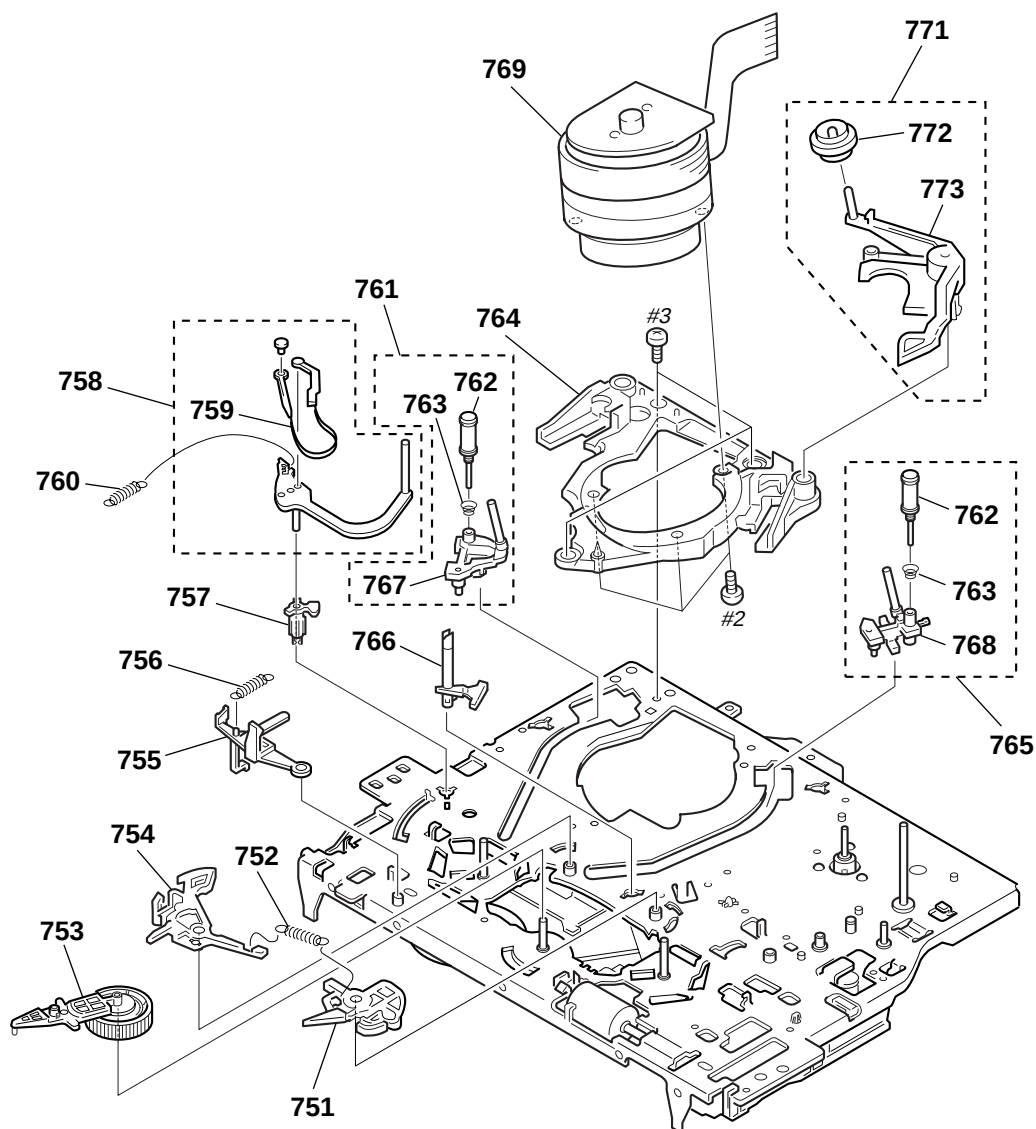
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	51	3-959-383-01	BASE (R), MD	* 53	A-6791-518-A	MA-314 BOARD, COMPLETE (E177/E180: EG)	
	52	3-970-608-21	SUMITITE (B3), +BV	* 53	A-6791-519-A	MA-314 BOARD, COMPLETE (E180: EE)	
* 53	A-6791-440-A	MA-314 BOARD, COMPLETE (E230: UY)		* 53	A-6791-520-A	MA-314 BOARD, COMPLETE (E480: EG)	
* 53	A-6791-441-A	MA-314 BOARD, COMPLETE (E230: VP1, VP2)		* 53	A-6791-521-A	MA-314 BOARD, COMPLETE (E477)	
* 53	A-6791-442-A	MA-314 BOARD, COMPLETE (E285: VC)		* 53	A-6791-522-A	MA-314 BOARD, COMPLETE (E380: EG)	
* 53	A-6791-443-A	MA-314 BOARD, COMPLETE (E295: UX)		* 53	A-6791-523-A	MA-314 BOARD, COMPLETE (E380: EE)	
* 53	A-6791-444-A	MA-314 BOARD, COMPLETE (E295: VC1, VC2)		54	1-468-271-11	ETXNY 165E1D BLOCK	
* 53	A-6791-474-A	MA-314 BOARD, COMPLETE (E230: AE)		Δ 55	1-777-854-21	CORD, POWER	
* 53	A-6791-475-A	MA-314 BOARD, COMPLETE (E230: CP)		* 56	3-979-382-01	PANEL, REAR (E)	
* 53	A-6791-476-A	MA-314 BOARD, COMPLETE (E285: B)				(E295: CP, VC1, VC2/E530: B, CP, VC)	
* 53	A-6791-477-A	MA-314 BOARD, COMPLETE (E230: EY)		* 56	3-979-382-11	PANEL, REAR (E) (E295: UX/E530: UX)	
* 53	A-6791-511-A	MA-314 BOARD, COMPLETE (E130)		* 56	3-979-382-21	PANEL, REAR (E) (E285/E430: B, CP, VC)	
* 53	A-6791-479-A	MA-314 BOARD, COMPLETE (E295: CP)		* 56	3-979-382-31	PANEL, REAR (E) (E430: AE, VP)	
* 53	A-6791-508-A	MA-314 BOARD, COMPLETE (E530: UX)		* 56	3-979-382-41	PANEL, REAR (E)	
* 53	A-6791-509-A	MA-314 BOARD, COMPLETE (E530: CP)				(E130/E230: AE, EY, UY, VP1, VP2)	
* 53	A-6791-510-A	MA-314 BOARD, COMPLETE (E430: AE)		* 56	3-979-382-51	PANEL, REAR (E) (E230: CP)	
* 53	A-6791-511-A	MA-314 BOARD, COMPLETE (E430: VP)		* 56	3-979-382-61	PANEL, REAR (E)	
* 53	A-6791-512-A	MA-314 BOARD, COMPLETE (E530: B)				(E177/E180: EG/E380: EG/E477/E480: EG)	
* 53	A-6791-513-A	MA-314 BOARD, COMPLETE (E430: CP)		* 56	3-979-382-71	PANEL, REAR (E)	
* 53	A-6791-514-A	MA-314 BOARD, COMPLETE (E430: B)				(E180: EE/E380: EE/E480: EE)	
* 53	A-6791-515-A	MA-314 BOARD, COMPLETE (E430: VC)		57	1-958-317-11	HARNESS (FE-113)	
* 53	A-6791-516-A	MA-314 BOARD, COMPLETE (E530: VC)		58	1-958-316-11	HARNESS (AC-221)	
* 53	A-6791-517-A	MA-314 BOARD, COMPLETE (E480: EE)		59	1-958-315-11	HARNESS (DM-129)	

8-1-3. MECHANISM CHASSIS ASSEMBLY (1)



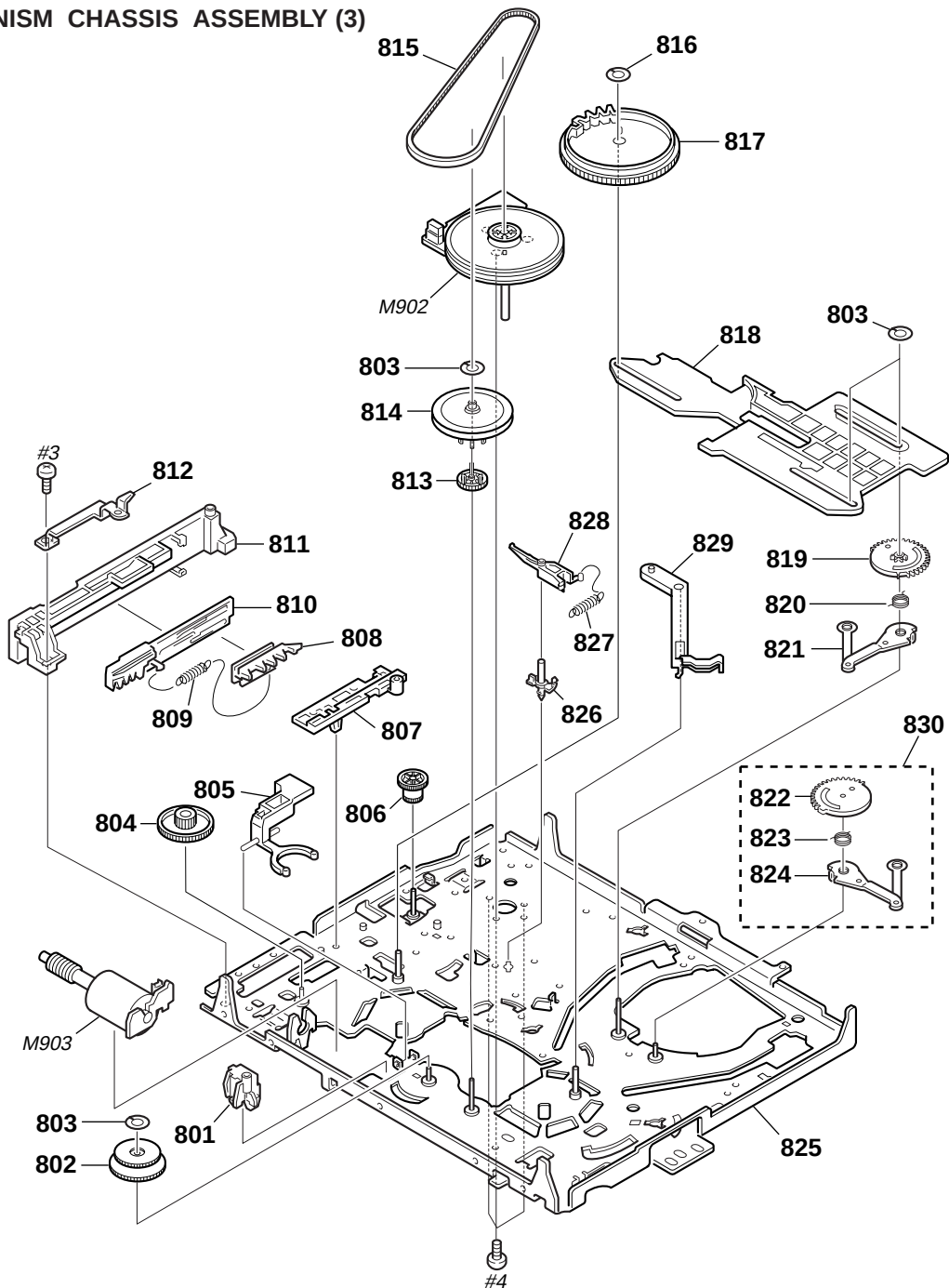
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
701	3-977-509-01	WASHER, THRUST		714	3-977-514-01	OPENER, LID	
702	3-977-507-01	TABLE, REEL (S)		715	3-977-441-01	GEAR, PINCH PRESSING	
703	3-977-508-01	TABLE, REEL (T)		716	3-977-445-01	GEAR, TG8 ARM DRIVING	
704	1-500-144-11	HEAD, FE		717	3-977-465-01	SPRING, EXTENSION (RVS BRAKE)	
705	3-977-495-01	SHAFT TG2		718	X-3947-582-1	ARM ASSY, RVS BRAKE	
706	3-977-494-01	HOLDER, FEH		719	3-977-446-01	GEAR, TG8 ARM	
707	A-6759-619-C	FL COMPLETE ASSY BOARD, COMPLETE		720	X-3947-590-1	TG8 ASSY	
708	3-977-535-01	PLATE, LUMINOUS (END SENSOR)		721	A-6759-620-A	HEAD BLOCK ASSY, ACE (ALPS) EURO	
709	3-977-536-01	PLATE, LUMINOUS (TOP SENSOR)		722	3-974-556-01	+ HEXA TT 2.6X9 (TAPER)	
710	3-970-471-01	SPRING (DECK OPEN), TORSION		723	3-979-508-01	SCREW +HEXA TP SW 3X8	
711	A-6759-615-A	PRESS BLOCK ASSY, PINCH		724	3-978-485-01	PLATE, GUIDE CASSETTE	
712	3-958-455-01	SPRING (PINCH), TENSION		725	3-977-443-01	WASHER, STOPPER	
713	3-977-447-01	GEAR, ELEVATOR		726	3-989-036-01	STOPPER, LOCK LEVER (S)	

8-1-4. MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
751	X-3947-581-1	BRAKE ASSY,MAIN (T)		765	A-6750-325-A	SHUTTLE (T) BLOCK ASSY	
752	3-977-462-01	SPRING, EXTENTION. (MAIN BRAKE)		766	3-977-501-01	PLATE, LUMINOUS	
753	X-3947-573-1	ARM ASSY, PENDULUM		767	X-3946-855-1	SHUTTLE (S) ASSY	
754	X-3947-580-2	BRAKE ASSY, MAIN (S)		768	X-3946-856-1	SHUTTLE (T) ASSY	
755	3-977-513-02	LEVER, REC. PROOF		769	1-759-183-11	DRUM ASSY, DZH-78A-R (E130/E177/E180/E230: AE, CP, VP2/ E285: B/E380)	
756	3-976-767-01	SPRING, TENS. (REC. PROOF)		769	1-759-522-11	DRUM ASSY, DZH-93A-R (E430/E477/E480/E530)	
757	3-977-487-01	BOSS, TG1 FULCRUM		769	1-759-523-11	DRUM ASSY, DZH-92A-R (E230: EY, UY, VP1/E285: VC/E295)	
758	X-3947-587-1	TG1 ASSY		771	A-6746-074-G	ROLLER BLOCK ASSY, HC	
759	X-3947-589-1	BAND ASSY, TG1		772	X-3947-255-1	ROLLER ASSY, HC	
760	3-977-488-01	SPRING (POWER TENSION)		773	3-975-724-07	ARM, HC	
761	A-6750-324-A	SHUTTLE (S) BLOCK ASSY					
762	X-3944-378-1	ROLLER ASSY, GUIDE					
763	3-965-178-01	SPRING					
764	3-969-632-04	BASE, DRUM					

8-1-5. MECHANISM CHASSIS ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
801	3-977-437-01	RETAINER, CAM MOTOR		817	3-977-439-01	GEAR, CAM	
802	X-3947-584-1	ASSY, REEL DIRECT		818	3-977-442-01	SLIDER	
803	3-977-443-01	WASHER, STOPPER		819	3-977-455-01	GEAR, LOADING (T)	
804	3-977-438-01	WORM - WHEEL		820	3-977-456-03	SPRING, TORSION (LOAD T)	
805	3-977-506-01	ARM, LIMITTER SELECTION		821	X-3947-579-1	LEVER ASSY, LOADING (T)	
806	3-977-444-01	GEAR, PINCH TRANSMISSION		822	3-977-451-01	GEAR, LOADING (S)	
807	3-977-515-01	GUIDE, FL SLIDER		823	3-977-452-01	SPRING, TORSION (LOAD S)	
808	3-977-517-01	PLATE, SLIDE, FL		824	X-3947-578-1	LEVER ASSY, LOADING (S)	
809	3-977-519-01	SPRING, TENS. (LIMIT, FL)		825	X-3947-576-2	CHASSIS ASSY, MECHANICAL	
810	3-977-518-02	PLATE, LIMITTER, FL		826	3-977-468-01	SHAFT, CAPSTAN BRAKE	
811	3-977-516-01	HOLDER, FL SLIDER		827	3-977-467-02	SPRING, CAP BRAKE	
812	3-977-877-01	PLATE, RETAINER		828	X-3947-583-1	BRAKE ASSY, CAPSTAN	
813	3-977-504-01	GEAR, CLUTCH		829	3-977-489-01	ARM, TG1 DRIVING	
814	X-3947-585-1	GEAR ASSY, PULLEY		830	A-6759-616-A	GEAR BLOCK ASSY, LOADING (S)	
815	3-977-510-01	BELT, RUBBER		M902	1-698-971-11	MOTOR, DC (CAPSTAN)	
816	3-977-440-01	WASHER, STOPPER		M903	X-3947-577-1	MOTOR ASSY, CAM	

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
• COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-6794-518-A	DS-78 BOARD, COMPLETE (E380)		C107	1-126-965-11	ELECT 22uF	50V
*	A-6794-517-A	DS-78 BOARD, COMPLETE (E530)		C201	1-126-968-11	ELECT 100uF	50V
*	A-6794-505-A	DS-78 BOARD, COMPLETE		C302	1-126-968-11	ELECT 100uF	50V
		(EXCEPT E380/E530)					
		*****		C402	1-126-925-11	ELECT 470uF	10V
		(Ref.No. 1,000 Series)		C501	1-126-960-11	ELECT 1uF	50V
		< CONNECTOR >				< DIODE >	
CN450	1-784-484-11	CONNECTOR, FFC/FPC 5P (E380/E530)		D001	8-719-066-97	DIODE 1N4007	
		< DIODE >		D002	8-719-066-97	DIODE 1N4007	
				D003	8-719-066-97	DIODE 1N4007	
D450	8-719-946-30	LED SLR34DC3 (JOG) (E530)		D004	8-719-066-97	DIODE 1N4007	
		< JUMPER RESISTOR >				< TRANSISTOR >	
JR702	1-216-296-91	SHORT 0		Q102	8-729-423-29	TRANSISTOR 2SC3311A-QTA	
JR704	1-216-296-91	SHORT 0 (E530)					
JR706	1-216-296-91	SHORT 0 (E380/E530)					
JR707	1-216-295-91	SHORT 0					
JR708	1-216-296-91	SHORT 0 (E380/E530)					
JR709	1-216-296-91	SHORT 0 (E380/E530)					
		< RESISTOR >				< CAPACITOR >	
R450	1-216-041-00	METAL CHIP 470 5% 1/10W		C481	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
		(E530)		C493	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
R451	1-216-053-00	METAL CHIP 1.5K 5% 1/10W				< CONNECTOR >	
R452	1-216-053-00	METAL CHIP 1.5K 5% 1/10W					
		< SWITCH >		* CN480	1-568-942-11	PIN, CONNECTOR 4P	
S450	1-571-977-11	SWITCH, TACTIL (FF) (E380/E530)				< DIODE >	
S451	1-571-977-11	SWITCH, TACTIL (FF) (EXCEPT E380/E530)		D480	8-719-109-97	DIODE RD6.8ES-B2	
S452	1-571-977-11	SWITCH, TACTIL (PLAY) (EXCEPT E380/E530)		D481	8-719-108-12	DIODE RD9.1E-W	
S453	1-571-977-11	SWITCH, TACTIL (STOP) (EXCEPT E380/E530)		D491	8-719-108-12	DIODE RD9.1E-W	
S454	1-571-977-11	SWITCH, TACTIL (REW) (EXCEPT E380/E530)				< JACK >	
S455	1-571-977-11	SWITCH, TACTIL (REW) (E380/E530)		J481	1-774-510-11	JACK, PIN 2P (LINE 2 IN)	
S456	1-571-977-11	SWITCH, TACTIL (JOG) (E530)				< RESISTOR >	
	1-468-271-11	ETXNY 165E1D BLOCK (Ref.No. 2,000 Series)		R480	1-216-022-00	METAL CHIP 75 5% 1/10W	
		*****		R491	1-216-041-00	METAL CHIP 470 5% 1/10W	
		< CAPACITOR >					
C003	9-980-236-01	ELECT 47uF 400V					
C102	1-126-964-11	ELECT 10uF 50V					

MA-314

Ref. No.	Part No.	Description	Remark
*	A-6791-478-A	MA-314 BOARD, COMPLETE (E130)	
*	A-6791-518-A	MA-314 BOARD, COMPLETE (E177/E180EG)	
*	A-6791-519-A	MA-314 BOARD, COMPLETE (E180EE)	
*	A-6791-474-A	MA-314 BOARD, COMPLETE (E230AE)	
*	A-6791-475-A	MA-314 BOARD, COMPLETE (E230CP)	
*	A-6791-477-A	MA-314 BOARD, COMPLETE (E230EY)	
*	A-6791-440-A	MA-314 BOARD, COMPLETE (E230UY)	
*	A-6791-441-A	MA-314 BOARD, COMPLETE (E230: VP1,VP2)	
*	A-6791-476-A	MA-314 BOARD, COMPLETE (E285B)	
*	A-6791-442-A	MA-314 BOARD, COMPLETE (E285VC)	
*	A-6791-479-A	MA-314 BOARD, COMPLETE (E295CP)	
*	A-6791-443-A	MA-314 BOARD, COMPLETE (E295UX)	
*	A-6791-444-A	MA-314 BOARD, COMPLETE (E295: VC1,VC2)	
*	A-6791-523-A	MA-314 BOARD, COMPLETE (E380EE)	
*	A-6791-522-A	MA-314 BOARD, COMPLETE (E380EG)	
*	A-6791-510-A	MA-314 BOARD, COMPLETE (E430AE)	
*	A-6791-514-A	MA-314 BOARD, COMPLETE (E430B)	
*	A-6791-513-A	MA-314 BOARD, COMPLETE (E430CP)	
*	A-6791-511-A	MA-314 BOARD, COMPLETE (E430VP)	
*	A-6791-515-A	MA-314 BOARD, COMPLETE (E430VC)	
*	A-6791-521-A	MA-314 BOARD, COMPLETE (E477)	
*	A-6791-517-A	MA-314 BOARD, COMPLETE (E480EE)	
*	A-6791-520-A	MA-314 BOARD, COMPLETE (E480EG)	
*	A-6791-512-A	MA-314 BOARD, COMPLETE (E530B)	
*	A-6791-509-A	MA-314 BOARD, COMPLETE (E530CP)	
*	A-6791-508-A	MA-314 BOARD, COMPLETE (E530UX)	
*	A-6791-516-A	MA-314 BOARD, COMPLETE (E530VC)	

(Ref.No. 1,000 Series)			
*	3-960-273-01	SPACER, TOP END	
*	3-960-274-01	SPACER, LED	
< CAPACITOR >			
C100	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C101	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C102	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C103	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C104	1-128-057-11	ELECT	330uF 20% 6.3V
C107	1-124-589-11	ELECT	47uF 20% 16V
C110	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C111	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C114	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C117	1-124-589-11	ELECT	47uF 20% 16V
C131	1-124-589-11	ELECT	47uF 20% 16V
C133	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C134	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C162	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C163	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C164	1-124-584-00	ELECT	100uF 20% 10V
C165	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C166	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C167	1-124-584-00	ELECT	100uF 20% 10V
C168	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C169	1-104-905-11	CAPACITOR	0.22F 5.5V
C170	1-128-131-11	ELECT	22uF 20% 50V
C171	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C172	1-128-131-11	ELECT	22uF 20% 50V

Ref. No.	Part No.	Description	Remark
C173	1-163-229-11	CERAMIC CHIP	12PF 5% 50V
C174	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C175	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V
C176	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C177	1-128-131-11	ELECT	22uF 20% 50V
C178	1-163-099-00	CERAMIC CHIP	18PF 5% 50V
C179	1-124-584-00	ELECT	100uF 20% 10V
C180	1-163-235-11	CERAMIC CHIP	22PF 5% 50V
C181	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C182	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C184	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C185	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C201	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C202	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C204	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C205	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C206	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C207	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C208	1-163-241-11	CERAMIC CHIP	39PF 5% 50V
C209	1-128-131-11	ELECT	22uF 20% 50V
C210	1-163-131-00	CERAMIC CHIP	390PF 5% 50V
C211	1-163-237-11	CERAMIC CHIP	27PF 5% 50V
(E430/E477/E480/E530)			
C211	1-163-239-11	CERAMIC CHIP	33PF 5% 50V
(E130/E177/E180/E230/E285/E295/E380)			
C213	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C215	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C217	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C218	1-163-243-11	CERAMIC CHIP	47PF 5% 50V
(EXCEPT E180EE/E380EE/E480EE)			
C219	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C220	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C221	1-163-038-11	CERAMIC CHIP	0.1uF 25V
(E295/E380EE/E430: AE,VP/E530)			
C222	1-163-243-11	CERAMIC CHIP	47PF 5% 50V
(E430: AE, VP)			
C223	1-124-589-11	ELECT	47uF 20% 16V
C224	1-164-159-11	CERAMIC	0.1uF 50V
C226	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C227	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C228	1-126-157-11	ELECT	10uF 20% 16V
C229	1-164-159-11	CERAMIC	0.1uF 50V
C230	1-126-967-11	ELECT	47uF 20% 16V
C231	1-126-157-11	ELECT	10uF 20% 16V
C232	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C233	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C234	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C235	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C236	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C237	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C238	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C239	1-126-967-11	ELECT	47uF 20% 16V
C240	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C241	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C242	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C243	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C244	1-163-038-11	CERAMIC CHIP	0.1uF 25V
C245	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C246	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C247	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C248	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C315	1-126-160-11	ELECT	1uF	20%	50V
C249	1-126-967-11	ELECT	47uF	20%	16V	C317	1-126-163-11	ELECT	4.7uF	20%	50V
C250	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C318	1-124-589-11	ELECT	47uF	20%	16V
C251	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C321	1-124-589-11	ELECT	47uF	20%	16V
C252	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C322	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C253	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C323	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C255	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C324	1-137-397-11	FILM	0.047uF	5%	100V
C256	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C400	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C260	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C421	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C261	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C422	1-124-589-11	ELECT	47uF	20%	16V
			(E430/E477/E480/E530)			C423	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C264	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C424	1-124-589-11	ELECT	47uF	20%	16V
C265	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C500	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
			(E430/E477/E480/E530)						(EXCEPT E180EE/E380EE/E480EE)		
C266	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C510	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C267	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C511	1-124-589-11	ELECT	47uF	20%	16V
C268	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	C512	1-124-589-11	ELECT	47uF	20%	16V
C269	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	C513	1-126-935-11	ELECT	470uF	20%	6.3V
C270	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C530	1-124-589-11	ELECT	47uF	20%	16V
C271	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C272	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	C531	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
			(E430/E477/E480/E530)						(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C272	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C532	1-126-933-11	ELECT	100uF	20%	16V
			(E130/E177/E180/E230/E285/E295/E380)						(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C273	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	C541	1-124-584-00	ELECT	100uF	20%	10V
			(E430/E477/E480/E530)						(E230CP/E285/E295/E430: B, CP, VC/E530)		
C273	1-216-025-91	RES, CHIP	100	5%	1/10W	C542	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
			(E130/E177/E180/E230/E285/E295/E380)						(E230CP/E285/E295/E430: B, CP, VC/E530)		
C274	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C543	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
			(E430/E477/E480/E530)						(E230CP/E285/E295/E430: B, CP, VC/E530)		
C276	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C544	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C277	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C278	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C545	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
			(E430/E477/E480/E530)						(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C279	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C546	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
			(E430/E477/E480/E530)						(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C280	1-124-584-00	ELECT	100uF	20%	10V	C547	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C281	1-109-982-11	CERAMIC CHIP	1uF	10%	10V				(E230CP/E285/E295/E430: B, CP, VC/E530)		
C282	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C548	1-162-215-21	CAP, CERAMIC	47PF	5%	50V
C283	1-163-038-11	CERAMIC CHIP	0.1uF		25V				(E230CP/E285/E295/E430: B, CP, VC/E530)		
C284	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C571	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C286	1-124-584-00	ELECT	100uF	20%	10V				(E230CP/E285/E295/E430/E530)		
C287	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	C572	1-124-261-00	ELECT	10uF	20%	50V
C288	1-163-239-11	CERAMIC CHIP	33PF	5%	50V				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C289	1-163-038-11	CERAMIC CHIP	0.1uF		25V	C580	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C301	1-164-159-11	CERAMIC	0.1uF		50V				(E230CP/E285/E295/E430: B, CP, VC/E530)		
C302	1-124-589-11	ELECT	47uF	20%	16V	C581	1-126-964-11	ELECT	10uF	20%	50V
C303	1-109-982-11	CERAMIC CHIP	1uF	10%	10V				(E230CP/E285/E295/E430: B, CP, VC/E530)		
C304	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C582	1-124-261-00	ELECT	10uF	20%	50V
			(E295/E380EE/E430: AE,VP/E530)						(E230CP/E285/E295/E430: B, CP, VC/E530)		
C305	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C583	1-124-261-00	ELECT	10uF	20%	50V
C306	1-109-982-11	CERAMIC CHIP	1uF	10%	10V				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		
C307	1-126-157-11	ELECT	10uF	20%	16V						
C308	1-124-589-11	ELECT	47uF	20%	16V						
C309	1-126-963-11	ELECT	4.7uF	20%	50V						
C310	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V						
C311	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V						
C312	1-137-370-11	FILM	0.01uF	5%	50V						
C313	1-126-157-11	ELECT	10uF	20%	16V						
C314	1-164-232-11	CERAMIC CHIP	0.01uF		50V						

Ref. No.	Part No.	Description	Remark
C584	1-126-964-11	ELECT 10uF 20% 50V (E230CP/E285/E295/E430: B, CP, VC/E530)	
C585	1-124-261-00	ELECT 10uF 20% 50V (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
C586	1-124-261-00	ELECT 10uF 20% 50V (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
C587	1-126-960-11	ELECT 1uF 20% 50V (E230CP/E285/E295/E430: B, CP, VC/E530)	
C600	1-128-131-11	ELECT 22uF 20% 50V	
C601	1-128-131-11	ELECT 22uF 20% 50V	
C602	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C603	1-124-589-11	ELECT 47uF 20% 16V	
C605	1-128-131-11	ELECT 22uF 20% 50V	
C606	1-124-589-11	ELECT 47uF 20% 16V	
C607	1-124-248-00	ELECT 22uF 20% 35V	
C608	1-124-248-00	ELECT 22uF 20% 35V	
C610	1-107-725-11	CERAMIC CHIP 0.1uF 10% 16V	
C660	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C661	1-124-589-11	ELECT 47uF 20% 16V	
C662	1-137-372-11	FILM 0.022uF 5% 50V	
C663	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C666	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C667	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C668	1-163-253-11	CERAMIC CHIP 120PF 5% 50V	
C669	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C670	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V	
C672	1-126-160-11	ELECT 1uF 20% 50V	
C673	1-163-245-11	CERAMIC CHIP 56PF 5% 50V (E177/E180/E285B/E380/E430B/E477/E480/E530B)	
C674	1-163-231-11	CERAMIC CHIP 15PF 5% 50V	
C675	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C676	1-124-589-11	ELECT 47uF 20% 16V	
C677	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C701	1-126-964-11	ELECT 10uF 20% 50V	
C704	1-126-964-11	ELECT 10uF 20% 50V	
C705	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C708	1-126-967-11	ELECT 47uF 20% 16V	
C709	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C710	1-128-131-11	ELECT 22uF 20% 50V	
C750	1-126-933-11	ELECT 100uF 20% 16V	
C751	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C752	1-126-933-11	ELECT 100uF 20% 16V	
C753	1-107-725-11	CERAMIC CHIP 0.1uF 10% 16V	
C754	1-126-924-11	ELECT 330uF 20% 10V (EXCEPT E180EE/E380EE/E480EE)	
C755	1-164-232-11	CERAMIC CHIP 0.01uF 50V (EXCEPT E180EE/E380EE/E480EE)	
C850	1-163-038-11	CERAMIC CHIP 0.1uF 25V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
C851	1-126-157-11	ELECT 10uF 20% 16V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
C852	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	

Ref. No.	Part No.	Description	Remark
C853	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
C855	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
C856	1-163-038-11	CERAMIC CHIP 0.1uF 25V (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
C970	1-163-259-91	CERAMIC CHIP 220PF 5% 50V (E285B/E430B/E530B)	
C971	1-124-257-00	ELECT 2.2uF 20% 50V (E285B/E430B/E530B)	
C972	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V (E285B/E430B/E530B)	
C973	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C974	1-109-982-11	CERAMIC CHIP 1uF 10% 10V (E285B/E430B/E530B)	
C975	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V (E285B/E430B/E530B)	
C976	1-163-259-91	CERAMIC CHIP 220PF 5% 50V (E285B/E430B/E530B)	
C977	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C978	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V (E285B/E430B/E530B)	
C979	1-163-121-00	CERAMIC CHIP 150PF 5% 50V (E285B/E430B/E530B)	
C980	1-107-725-11	CERAMIC CHIP 0.1uF 10% 16V (E285B/E430B/E530B)	
C981	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C982	1-163-007-11	CERAMIC CHIP 680PF 10% 50V (E285B/E430B/E530B)	
C983	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V (E285B/E430B/E530B)	
C984	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C985	1-163-251-11	CERAMIC CHIP 100PF 5% 50V (E285B/E430B/E530B)	
C986	1-126-157-11	ELECT 10uF 20% 16V (E285B/E430B/E530B)	
C987	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V (E285B/E430B/E530B)	
C988	1-163-251-11	CERAMIC CHIP 100PF 5% 50V (E285B/E430B/E530B)	
C991	1-107-725-11	CERAMIC CHIP 0.1uF 10% 16V (E285B/E430B/E530B)	
C992	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C993	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C994	1-164-232-11	CERAMIC CHIP 0.01uF 50V (E285B/E430B/E530B)	
C995	1-126-157-11	ELECT 10uF 20% 16V (E285B/E430B/E530B)	
C996	1-163-227-11	CERAMIC CHIP 10PF 0.5PF 50V (E285B/E430B/E530B)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CONNECTOR >				D543	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
* CN101	1-568-954-11	PIN, CONNECTOR 5P		D544	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
CN102	1-779-723-11	CONNECTOR, BOARD TO BOARD 9P		D545	8-719-109-97	DIODE RD6.8ES-B2	
CN104	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P		D571	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430/E530)	
CN161	1-506-469-11	PIN, CONNECTOR 4P (E295/E380EE/E530)		D572	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430/E530)	
CN162	1-506-468-11	PIN, CONNECTOR 3P		D575	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430: B, CP, VC/E530)	
CN163	1-506-469-11	PIN, CONNECTOR 4P (EXCEPT E380/E530)		D576	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430: B, CP, VC/E530)	
* CN163	1-568-936-11	PIN, CONNECTOR 9P (E380/E530)		D579	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430/E530)	
CN260	1-784-487-11	CONNECTOR, FFC/FPC 8P		D580	8-719-911-19	DIODE 1SS119	
* CN262	1-560-893-00	PIN, CONNECTOR 5P		D581	8-719-911-19	DIODE 1SS119	
CN301	1-506-469-11	PIN, CONNECTOR 4P		D582	8-719-109-97	DIODE RD6.8ES-B2	
CN302	1-506-468-11	PIN, CONNECTOR 3P		D583	8-719-109-97	DIODE RD6.8ES-B2	
* CN500	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P (LINE 1 (TV)) (EXCEPT E180EE/E380EE/E480EE)		D600	8-719-911-19	DIODE 1SS119	
* CN570	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P (LINE 3) (E230CP/E285/E295/E430/E530)		D601	8-719-911-19	DIODE 1SS119	
CN600	1-569-667-11	CONNECTOR, BOARD TO BOARD 8P		D602	8-719-109-85	DIODE RD5.1ES-B2	
< JACK >				D661	8-719-911-19	DIODE 1SS119	
CNJ500	1-779-010-11	JACK, PIN 4P (LINE 1 IN/LINE OUT) (E180EE/E380EE/E480EE)		D662	8-719-911-19	DIODE 1SS119	
< DIODE >				D702	8-719-982-26	DIODE MTZJ-33B	
D101	8-719-200-82	DIODE 11ES2		D703	8-719-109-97	DIODE RD6.8ES-B2	
D102	8-719-048-26	DIODE GL528V1		D751	8-719-109-85	DIODE RD5.1ES-B2	
D104	8-719-200-82	DIODE 11ES2		D752	8-719-911-19	DIODE 1SS119	
D161	8-719-200-82	DIODE 11ES2 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		< FILTER >			
D162	8-719-056-07	DIODE SLR-342MCT31 (ON/STANDBY)		FL500	1-236-163-11	ENCAPSULATED COMPONENT	
D163	8-719-200-82	DIODE 11ES2		FL502	1-236-163-11	ENCAPSULATED COMPONENT	
D164	8-719-200-82	DIODE 11ES2		FL570	1-236-163-11	ENCAPSULATED COMPONENT (E230CP/E285/E295/E430/E530)	
D165	8-719-109-97	DIODE RD6.8ES-B2		FL572	1-236-163-11	ENCAPSULATED COMPONENT (E230CP/E285/E295/E430: B, CP, VC/E530)	
D166	8-719-109-97	DIODE RD6.8ES-B2		FL660	1-233-527-11	FILTER, TRAP	
D401	8-719-109-97	DIODE RD6.8ES-B2		< IC >			
D500	8-719-109-97	DIODE RD6.8ES-B2		IC130	8-759-481-46	IC LB1943	
D501	8-719-109-97	DIODE RD6.8ES-B2		IC161	8-759-482-27	IC M37777MAA104GP (E230/E285B/E295/E380EG/E430/ E480EG/E530: CP, UX, VC)	
D504	8-719-109-97	DIODE RD6.8ES-B2		IC161	8-759-495-33	IC M37777MAA105GP (E130/E177/E180EG/E477)	
D505	8-719-109-97	DIODE RD6.8ES-B2		IC161	8-759-482-29	IC M37777M7A238GP-C (E180EE/E380EE/E480EE)	
D511	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT E180EE/E380EE/E480EE)		IC161	8-759-534-75	IC M37777MAA106GP (E285VC/E530B)	
D512	8-719-921-86	DIODE MTZJ-13 (EXCEPT E180EE/E380EE/E480EE)		IC162	8-759-248-87	IC MM1256XF-BE	
D513	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT E180EE/E380EE/E480EE)		IC163	8-759-432-32	IC ST24W04FM6TR	
D514	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT E180EE/E380EE/E480EE)		IC163	8-759-432-33	IC ST24W08FM6TR	
D515	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT E180EE/E380EE/E480EE)		IC163	8-759-518-23	IC X24C04S8	
D516	8-719-109-97	DIODE RD6.8ES-B2 (EXCEPT E180EE/E380EE/E480EE)		IC163	8-759-454-78	IC 24LC08BT/SN	
D517	8-719-109-97	DIODE RD6.8ES-B2		IC201	8-759-479-25	IC LA71514M-MPB	
D540	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430/E530)		IC202	8-759-439-50	IC LC89977M-TE-L	
D541	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295/E430/E530)		IC260	8-759-352-17	IC HA118195NT (E430/E477/E480/E530)	
D542	8-719-109-97	DIODE RD6.8ES-B2 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		IC260	8-759-357-84	IC HA118295NT (E130/E177/E180/E230/E285/E295/E380)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC301	8-759-499-30	IC BA7755AF-E2		JR033	1-216-295-91	SHORT 0	
IC400	8-742-042-00	HY B IC SBX1986-51		JR034	1-216-296-91	SHORT 0	
IC420	8-759-366-44	IC uPD16312GB-3B4		JR036	1-216-296-91	SHORT 0	
△ IC530	8-759-438-18	IC PQ12RD08		JR037	1-216-295-91	SHORT 0	
		(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		JR038	1-216-296-91	SHORT 0	
IC540	8-759-438-16	IC STV6400D		JR039	1-216-296-91	SHORT 0	
		(E230CP/E285/E295/E430: B, CP, VC/E530)		JR040	1-216-296-91	SHORT 0	
IC580	8-759-300-71	IC HD14053BFP		JR041	1-216-296-91	SHORT 0	
		(E230CP/E285/E295/E430: B, CP, VC/E530)		JR042	1-216-296-91	SHORT 0 (E285B/E430B/E530B)	
△ IC600	8-759-438-18	IC PQ12RD08		JR043	1-216-295-91	SHORT 0 (E285B/E430B/E530B)	
IC660	8-759-480-27	IC LC74790M-9693-TLM		JR044	1-216-296-91	SHORT 0 (E285B/E430B/E530B)	
		(E130/E230/E285/E295/E430/E530)		JR045	1-216-296-91	SHORT 0	
IC660	8-759-480-26	IC LC74790M-9702-TLM		JR046	1-216-296-91	SHORT 0	
		(E177/E180/E380/E477/E480)		JR047	1-216-295-91	SHORT 0	
IC850	8-759-484-61	IC SDA5650X-GEG		JR048	1-216-295-91	SHORT 0	
		(E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)		JR049	1-216-296-91	SHORT 0	
IC970	8-759-438-17	IC LA7337 (E285B/E430B/E530B)		JR050	1-216-296-91	SHORT 0	
		< JUMPER RESISTOR >		JR051	1-216-296-91	SHORT 0	
JR001	1-216-296-91	SHORT 0		JR052	1-216-296-91	SHORT 0	
JR002	1-216-295-91	SHORT 0		JR053	1-216-296-91	SHORT 0	
JR003	1-216-295-91	SHORT 0 (E530)		JR054	1-216-296-91	SHORT 0	
JR004	1-216-296-91	SHORT 0		JR055	1-216-296-91	SHORT 0	
JR005	1-216-296-91	SHORT 0 (E530)		JR056	1-216-296-91	SHORT 0	
JR006	1-216-296-91	SHORT 0		JR057	1-216-296-91	SHORT 0 (E285B/E430B/E530B)	
JR007	1-216-296-91	SHORT 0		JR058	1-216-295-91	SHORT 0	
JR008	1-216-296-91	SHORT 0		JR059	1-216-296-91	SHORT 0	
JR009	1-216-296-91	SHORT 0		JR060	1-216-295-91	SHORT 0	
JR010	1-216-296-91	SHORT 0		JR061	1-216-296-91	SHORT 0 (E285B/E430B/E530B)	
JR011	1-216-296-91	SHORT 0 (E295/E380EE/E530)		JR062	1-216-296-91	SHORT 0	
JR012	1-216-296-91	SHORT 0		JR063	1-216-296-91	SHORT 0 (E285B/E430B/E530B)	
JR013	1-216-295-91	SHORT 0		JR064	1-216-296-91	SHORT 0	
JR014	1-216-296-91	SHORT 0		JS541	1-216-296-91	SHORT 0	
JR015	1-216-296-91	SHORT 0				(E130/E177/E180/E230: AE, EY, UY, VP1, VP2/ E380/E430: AE, VP/E477/E480)	
JR016	1-216-296-91	SHORT 0		JS572	1-216-296-91	SHORT 0	
JR017	1-216-296-91	SHORT 0				(E130/E177/E180/E230: AE, EY, UY, VP1, VP2/ E295UX/E380/E430: AE, VP/E477/E480/E530UX)	
JR018	1-216-296-91	SHORT 0		JS573	1-216-296-91	SHORT 0	
JR019	1-216-296-91	SHORT 0				(E130/E177/E180/E230: AE, EY, UY, VP1, VP2/ E380/E430: AE, VP/E477/E480)	
JR020	1-216-296-91	SHORT 0 (E295/E380EE/E530)		JS750	1-216-295-91	SHORT 0	
JR021	1-216-296-91	SHORT 0				(EXCEPT E180EE/E380EE/E480EE)	
		(E230CP/E285/E295/E430/E530)		JS751	1-216-295-91	SHORT 0 (E180EE/E380EE/E480EE)	
JR022	1-216-296-91	SHORT 0				< COIL >	
		(E230CP/E285/E295/E430/E530)		L161	1-414-936-21	INDUCTOR 22uH	
JR023	1-216-296-91	SHORT 0		L162	1-414-936-21	INDUCTOR 22uH	
JR024	1-216-295-91	SHORT 0		L163	1-414-936-21	INDUCTOR 22uH	
JR025	1-216-296-91	SHORT 0		L164	1-414-936-21	INDUCTOR 22uH	
		(E230CP/E285/E295/E430: B, CP, VC/E530)		L201	1-414-946-21	INDUCTOR 39uH	
JR026	1-216-296-91	SHORT 0		L202	1-414-940-21	INDUCTOR 100uH	
JR027	1-216-295-91	SHORT 0		L204	1-414-934-21	INDUCTOR 10uH	
JR028	1-216-295-91	SHORT 0 (E285B/E430B/E530B)		L205	1-414-940-21	INDUCTOR 100uH	
JR029	1-216-296-91	SHORT 0		L206	1-414-934-21	INDUCTOR 10uH	
JR030	1-216-296-91	SHORT 0		L207	1-414-934-21	INDUCTOR 10uH	
JR031	1-216-296-91	SHORT 0		L208	1-469-014-21	INDUCTOR 120uH	
JR032	1-216-296-91	SHORT 0					

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L262	1-414-940-21	INDUCTOR 100uH		Q208	8-729-422-27	TRANSISTOR 2SD601A-Q	
L263	1-414-940-21	INDUCTOR 100uH		Q209	8-729-216-22	TRANSISTOR 2SA1162	
L301	1-414-940-21	INDUCTOR 100uH		Q210	8-729-422-27	TRANSISTOR 2SD601A-Q	
L321	1-414-940-21	INDUCTOR 100uH		Q211	8-729-422-27	TRANSISTOR 2SD601A-Q	
L510	1-414-940-21	INDUCTOR 100uH		Q260	8-729-422-27	TRANSISTOR 2SD601A-Q	
L530	1-414-940-21	INDUCTOR 100uH (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)		Q301	8-729-281-53	TRANSISTOR 2SC1815-GR	
L540	1-414-934-21	INDUCTOR 10uH (E230CP/E285/E295/E430: B, CP, VC/E530)		Q321	8-729-802-91	TRANSISTOR 2SD879	
L580	1-414-940-21	INDUCTOR 100uH (E230CP/E285/E295/E430: B, CP, VC/E530)		Q501	8-729-424-08	TRANSISTOR UN2111 (EXCEPT E180EE/E380EE/E480EE)	
L600	1-414-939-21	INDUCTOR 68uH		Q502	8-729-421-19	TRANSISTOR UN2213 (EXCEPT E180EE/E380EE/E480EE)	
L601	1-414-934-21	INDUCTOR 10uH		Q503	8-729-422-27	TRANSISTOR 2SD601A-Q	
L661	1-414-940-21	INDUCTOR 100uH		Q510	8-729-216-22	TRANSISTOR 2SA1162	
L662	1-414-936-21	INDUCTOR 22uH (E177/E180/E285B/E380/E430B/E477/E480/E530B)		Q540	8-729-216-22	TRANSISTOR 2SA1162 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
L663	1-414-940-21	INDUCTOR 100uH		Q580	8-729-422-27	TRANSISTOR 2SD601A-Q (E230CP/E285/E295/E430: B, CP, VC/E530)	
L701	1-414-930-21	INDUCTOR 2.2uH		Q581	8-729-421-19	TRANSISTOR UN2213 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
L750	1-414-930-21	INDUCTOR 2.2uH		Q582	8-729-421-19	TRANSISTOR UN2213 (E230CP/E285/E295/E430: B, CP, VC/E530)	
L751	1-414-930-21	INDUCTOR 2.2uH (EXCEPT E180EE/E380EE/E480EE)		Q583	8-729-421-19	TRANSISTOR UN2213 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
L970	1-414-933-11	INDUCTOR 6.8uH(E285B/E430B/E530B)		△ Q600	8-729-140-93	TRANSISTOR 2SB733-34	
L971	1-414-945-11	INDUCTOR 27uH (E285B/E430B/E530B)		Q601	8-729-422-27	TRANSISTOR 2SD601A-Q	
L972	1-414-938-21	INDUCTOR 47uH (E285B/E430B/E530B)		Q602	8-729-018-99	TRANSISTOR 2SD2394-F	
L973	1-414-938-21	INDUCTOR 47uH (E285B/E430B/E530B)		Q603	8-729-140-96	TRANSISTOR KSC1008 (EXCEPT E180EE/E380EE/E480EE)	
L975	1-414-934-21	INDUCTOR 10uH (E285B/E430B/E530B)		Q604	8-729-424-08	TRANSISTOR UN2111 (EXCEPT E180EE/E380EE/E480EE)	
		< FLUORECENT INDICATOR >		Q605	8-729-421-19	TRANSISTOR UN2213 (EXCEPT E180EE/E380EE/E480EE)	
ND420	1-517-724-11	TUBE, FLUORESCENT INDICATOR		Q606	8-729-119-79	TRANSISTOR 2SC2785-FEK	
		< PHOTO INTERRUPTER >		Q660	8-729-216-22	TRANSISTOR 2SA1162	
PH100	8-749-013-23	PHOTO INTERRUPTER GP3S120		Q661	8-729-216-22	TRANSISTOR 2SA1162	
PH101	8-749-013-23	PHOTO INTERRUPTER GP3S120		Q662	8-729-216-22	TRANSISTOR 2SA1162	
		< IC LINK >		Q750	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
△ PS100	1-533-586-31	LINK, IC 491.315 (315mA)		Q751	8-729-421-19	TRANSISTOR UN2213 (EXCEPT E180EE/E380EE/E480EE)	
△ PS131	1-533-586-31	LINK, IC 491.315 (315mA) (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CO, VC)		Q752	8-729-216-22	TRANSISTOR 2SA1162 (EXCEPT E180EE/E380EE/E480EE)	
△ PS600	1-533-593-11	LINK, IC 491002 (2A)		Q850	8-729-216-22	TRANSISTOR 2SA1162 (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
△ PS601	1-533-589-21	LINK, IC 491.750 (750mA)		Q970	8-729-216-22	TRANSISTOR 2SA1162 (E285B/E430B/E530B)	
		< TRANSISTOR >		Q972	8-729-424-08	TRANSISTOR UN2111 (E285B/E430B/E530B)	
Q100	8-729-043-84	TRANSISTOR PT380F3		Q973	8-729-422-27	TRANSISTOR 2SD601A-Q (E285B/E430B/E530B)	
Q101	8-729-043-84	TRANSISTOR PT380F3		Q974	8-729-422-27	TRANSISTOR 2SD601A-Q (E285B/E430B/E530B)	
Q102	8-729-281-53	TRANSISTOR 2SC1815-GR		Q975	8-729-424-08	TRANSISTOR UN2111 (E285B/E430B/E530B)	
Q161	8-729-804-41	TRANSISTOR 2SB1122-S (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)					
Q162	8-729-421-19	TRANSISTOR UN2213 (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)					
Q163	8-729-421-19	TRANSISTOR UN2213					
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q					
Q202	8-729-422-27	TRANSISTOR 2SD601A-Q					

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MA-314

Ref. No.	Part No.	Description	Remark		
Q976	8-729-421-19	TRANSISTOR UN2213	(E285B/E430B/E530B)		
		< RESISTOR >			
R100	1-216-089-91	RES, CHIP	47K	5%	1/10W
R101	1-249-413-11	CARBON	470	5%	1/4W F
R103	1-249-437-11	CARBON	47K	5%	1/4W
R104	1-216-081-00	METAL CHIP	22K	5%	1/10W
R105	1-216-081-00	METAL CHIP	22K	5%	1/10W
R106	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R107	1-216-049-91	RES, CHIP	1K	5%	1/10W
R108	1-249-400-11	CARBON	39	5%	1/4W F
R109	1-249-400-11	CARBON	39	5%	1/4W F
R111	1-216-065-91	RES, CHIP	4.7K	5%	1/10W
R112	1-216-089-91	RES, CHIP	47K	5%	1/10W
R113	1-216-089-91	RES, CHIP	47K	5%	1/10W
R114	1-216-089-91	RES, CHIP	47K	5%	1/10W
R115	1-216-089-91	RES, CHIP	47K	5%	1/10W
R119	1-249-413-11	CARBON	470	5%	1/4W F
R120	1-216-097-91	RES, CHIP	100K	5%	1/10W
R122	1-249-413-11	CARBON	470	5%	1/4W F
R123	1-247-815-91	CARBON	220	5%	1/4W
R130	1-216-085-00	METAL CHIP	33K	5%	1/10W
R131	1-216-085-00	METAL CHIP	33K	5%	1/10W
R134	1-216-089-91	RES, CHIP	47K	5%	1/10W
R135	1-216-073-00	METAL CHIP	10K	5%	1/10W
R136	1-216-077-00	METAL CHIP	15K	5%	1/10W
R160	1-216-073-00	METAL CHIP	10K	5%	1/10W
R161	1-216-049-91	RES, CHIP	1K	5%	1/10W
		(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)			
R162	1-216-049-91	RES, CHIP	1K	5%	1/10W
		(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)			
R163	1-249-407-11	CARBON	150	5%	1/4W F
R164	1-249-413-11	CARBON	470	5%	1/4W F
R167	1-216-049-91	RES, CHIP	1K	5%	1/10W
		(E130/E180EE/E230/E285VC/E295/ E380EE/E480EE/E530UX)			
R168	1-216-049-91	RES, CHIP	1K	5%	1/10W
		(E130/E180EE/E230/E285/E295/ E380EE/E430/E530)			
R169	1-216-049-91	RES, CHIP	1K	5%	1/10W
		(E130/E177/E180/E230: AE, CP, VP1, VP2/ E285VC/E295: CP, VC1, VC2/E380EG/ E430: AE, CP, VC, VP/E477/E480/E530: CP, VC)			
R170	1-216-121-91	RES, CHIP	1M	5%	1/10W
R171	1-216-065-91	RES, CHIP	4.7K	5%	1/10W
R172	1-249-429-11	CARBON	10K	5%	1/4W
R173	1-216-039-00	METAL CHIP	390	5%	1/10W
R174	1-218-179-11	RES, CHIP	10M	5%	1/10W
R175	1-216-113-00	METAL CHIP	470K	5%	1/10W
R176	1-216-041-00	METAL CHIP	470	5%	1/10W
R177	1-216-105-91	RES, CHIP	220K	5%	1/10W
R178	1-216-041-00	METAL CHIP	470	5%	1/10W
R179	1-216-041-00	METAL CHIP	470	5%	1/10W
R181	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R182	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R185	1-216-295-91	SHORT	0		
		(E130/E177/E180EG/E230UY/E285B/E430AE)			
R185	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
		(E230:AE,EY/380EG/E430CP)			
R185	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
		(E230CP/E295UX/E430: B, VP/E480EG)			
R185	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
		(E230: VP1, VP2/E430VC/E477/E530B)			
R185	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
		(E285VC/E530: CP, UX)			
R185	1-216-075-00	METAL CHIP	12K	5%	1/10W
		(E295CP/E530VC)			
R185	1-216-085-00	METAL CHIP	33K	5%	1/10W
		(E295: VC1, VC2)			
R186	1-216-049-91	RES, CHIP	1K	5%	1/10W
R187	1-216-295-91	SHORT	0		
R188	1-216-295-91	SHORT	0		
R189	1-249-417-11	CARBON	1K	5%	1/4W F
R190	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R191	1-216-089-91	RES, CHIP	47K	5%	1/10W
R192	1-216-089-91	RES, CHIP	47K	5%	1/10W
R194	1-216-295-91	SHORT	0		
R196	1-216-089-91	RES, CHIP	47K	5%	1/10W
R198	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R199	1-249-437-11	CARBON	47K	5%	1/4W
R201	1-216-041-00	METAL CHIP	470	5%	1/10W
R202	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
		(E430/E477/E480/E530)			
R202	1-216-065-91	RES, CHIP	4.7K	5%	1/10W
		(E130/E177/E180/E230/E285/E295/E380)			
R203	1-249-413-11	CARBON	470	5%	1/4W F
R204	1-216-047-91	RES, CHIP	820	5%	1/10W
R205	1-216-037-00	METAL CHIP	330	5%	1/10W
R206	1-216-037-00	METAL CHIP	330	5%	1/10W
R207	1-216-073-00	METAL CHIP	10K	5%	1/10W
R208	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R209	1-216-041-00	METAL CHIP	470	5%	1/10W
R210	1-216-025-91	RES, CHIP	100	5%	1/10W
R218	1-216-065-91	RES, CHIP	4.7K	5%	1/10W
R219	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R221	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R222	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R223	1-216-017-91	RES, CHIP	47	5%	1/10W
R224	1-216-017-91	RES, CHIP	47	5%	1/10W
		(E295/E380EE/E430: AE, VP/E530)			
R225	1-216-295-91	SHORT	0		
R226	1-216-025-91	RES, CHIP	100	5%	1/10W
R227	1-216-025-91	RES, CHIP	100	5%	1/10W
R228	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R229	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R230	1-216-045-00	METAL CHIP	680	5%	1/10W
R231	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R232	1-216-049-91	RES, CHIP	1K	5%	1/10W
R233	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R234	1-216-089-91	RES, CHIP	47K	5%	1/10W
R235	1-216-049-91	RES, CHIP	1K	5%	1/10W
R236	1-216-049-91	RES, CHIP	1K	5%	1/10W
R237	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R238	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R239	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark				
R240	1-216-049-91	RES, CHIP	1K	5%	1/10W	R408	1-216-069-00	METAL CHIP	6.8K	5%	1/10W		
R243	1-216-061-00	METAL CHIP	3.3K	5%	1/10W		R412	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R260	1-216-045-00	METAL CHIP	680	5%	1/10W			R413	1-216-013-00	METAL CHIP	33	5%	1/10W
R261	1-216-045-00	METAL CHIP	680	5%	1/10W			R414	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
(E430/E477/E480/E530)					R415			1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R262	1-216-295-91	SHORT	0			R416		1-216-065-91	RES, CHIP	4.7K	5%	1/10W	
R263	1-216-295-91	SHORT	0				(EXCEPT E130/E230)						
R264	1-216-295-91	SHORT	0				R417	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R265	1-216-295-91	SHORT	0	(E430/E477/E480/E530)				(EXCEPT E130/E230)					
R266	1-216-055-00	METAL CHIP	1.8K	5%	1/10W			R418	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
(E430/E477/E480/E530)					(EXCEPT E130/E230)								
R266	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	R422			1-249-417-11	CARBON	1K	5%	1/4W F
(E230: EY, UY/E295)					R423		1-249-417-11		CARBON	1K	5%	1/4W F	
R266	1-216-051-00	METAL CHIP	1.2K	5%	1/10W		R424		1-249-417-11	CARBON	1K	5%	1/4W F
(E130/E177/E180/E230: AE, CP, VP1, VP2/ E285/E380)					R425		1-216-085-00	METAL CHIP	33K	5%	1/10W		
R267	1-216-073-00	METAL CHIP	10K	5%	1/10W		R426	1-216-065-91	RES, CHIP	4.7K	5%	1/10W	
R268	1-216-081-00	METAL CHIP	22K	5%	1/10W	R500	1-216-041-00	METAL CHIP	470	5%	1/10W		
R269	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R501	1-216-041-00	METAL CHIP	470	5%	1/10W		
R270	1-216-081-00	METAL CHIP	22K	5%	1/10W	R502	1-216-041-00	METAL CHIP	470	5%	1/10W		
R271	1-216-049-91	RES, CHIP	1K	5%	1/10W	R504	1-216-033-00	METAL CHIP	220	5%	1/10W		
R272	1-216-081-00	METAL CHIP	22K	5%	1/10W	R505	1-216-049-91	RES, CHIP	1K	5%	1/10W		
R273	1-216-081-00	METAL CHIP	22K	5%	1/10W	R510	1-249-408-11	CARBON	180	5%	1/4W F		
R274	1-216-073-00	METAL CHIP	10K	5%	1/10W		R511	1-249-407-11	CARBON	150	5%	1/4W F	
R275	1-216-073-00	METAL CHIP	10K	5%	1/10W		R512	1-216-021-00	METAL CHIP	68	5%	1/10W	
R276	1-216-049-91	RES, CHIP	1K	5%	1/10W		R514	1-216-037-00	METAL CHIP	330	5%	1/10W	
R278	1-216-025-91	RES, CHIP	100	5%	1/10W		R515	1-216-049-91	RES, CHIP	1K	5%	1/10W	
(E130/E177/E180/E230/E285/E295/E380)					(EXCEPT E180EE/E380EE/E480EE)								
R301	1-216-093-00	METAL CHIP	68K	5%	1/10W	R516	1-216-065-91	RES, CHIP	4.7K	5%	1/10W		
R302	1-216-067-00	METAL CHIP	5.6K	5%	1/10W		(EXCEPT E180EE/E380EE/E480EE)						
R303	1-216-093-00	METAL CHIP	68K	5%	1/10W		R517	1-216-022-00	METAL CHIP	75	5%	1/10W	
R304	1-216-093-00	METAL CHIP	68K	5%	1/10W		R530	1-216-049-91	RES, CHIP	1K	5%	1/10W	
(E295/E380EE/E430: AE, VP/E530)					(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)								
R305	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	R531	1-216-055-00	METAL CHIP	1.8K	5%	1/10W		
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W		(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)						
R307	1-216-061-00	METAL CHIP	3.3K	5%	1/10W		R540	1-216-025-91	RES, CHIP	100	5%	1/10W	
R308	1-216-067-00	METAL CHIP	5.6K	5%	1/10W			(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)					
(E295/E380EE/E430: AE, VP/E530)					R541			1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R309	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)							
R310	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	R542		1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R311	1-216-051-00	METAL CHIP	1.2K	5%	1/10W		(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)						
R312	1-216-079-00	METAL CHIP	18K	5%	1/10W		R545	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R313	1-216-109-00	METAL CHIP	330K	5%	1/10W			R546	1-216-089-91	RES, CHIP	47K	5%	1/10W
R314	1-216-035-00	METAL CHIP	270	5%	1/10W				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)				
R315	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R547			1-216-049-91	RES, CHIP	1K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W				(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)				
R317	1-216-079-00	METAL CHIP	18K	5%	1/10W		R548		1-216-022-00	METAL CHIP	75	5%	1/10W
R318	1-216-075-00	METAL CHIP	12K	5%	1/10W			(E230CP/E285/E295/E430/E530)					
R320	1-216-047-91	RES, CHIP	820	5%	1/10W			R549	1-216-022-00	METAL CHIP	75	5%	1/10W
R321	1-249-401-11	CARBON	47	5%	1/4W F	(E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)							
R322	1-216-063-91	RES, CHIP	3.9K	5%	1/10W	R570			1-216-041-00	METAL CHIP	470	5%	1/10W
R323	1-249-381-11	CARBON	1	5%	1/4W F		(E230CP/E285/E295/E430/E530)						
R324	1-216-031-00	METAL CHIP	180	5%	1/10W								
R401	1-216-073-00	METAL CHIP	10K	5%	1/10W								
R402	1-216-013-00	METAL CHIP	33	5%	1/10W								
R403	1-216-053-00	METAL CHIP	1.5K	5%	1/10W								
R404	1-216-053-00	METAL CHIP	1.5K	5%	1/10W								
R405	1-216-057-00	METAL CHIP	2.2K	5%	1/10W								
R406	1-216-059-00	METAL CHIP	2.7K	5%	1/10W								
R407	1-216-065-91	RES, CHIP	4.7K	5%	1/10W								

Ref. No.	Part No.	Description	Remark
R571	1-216-041-00	METAL CHIP 470 5% 1/10W (E230CP/E285/E295/E430/E530)	
R572	1-216-041-00	METAL CHIP 470 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R574	1-216-097-91	RES, CHIP 100K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R580	1-216-073-00	METAL CHIP 10K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R581	1-216-077-00	METAL CHIP 15K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R582	1-216-057-00	METAL CHIP 2.2K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R583	1-216-097-91	RES, CHIP 100K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R584	1-216-097-91	RES, CHIP 100K 5% 1/10W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R585	1-216-097-91	RES, CHIP 100K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R586	1-249-441-11	CARBON 100K 5% 1/4W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R587	1-249-441-11	CARBON 100K 5% 1/4W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R588	1-216-073-00	METAL CHIP 10K 5% 1/10W (E230CP/E285/E295/E430: B, CP, VC/E530)	
R589	1-216-073-00	METAL CHIP 10K 5% 1/10W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R590	1-216-073-00	METAL CHIP 10K 5% 1/10W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R600	1-249-417-11	CARBON 1K 5% 1/4W F	
R601	1-216-452-11	METAL OXIDE 180 5% 2W F	
R602	1-249-417-11	CARBON 1K 5% 1/4W F	
R603	1-216-089-91	RES, CHIP 47K 5% 1/10W (EXCEPT E180EE/E380EE/E480EE)	
R604	1-216-069-00	METAL CHIP 6.8K 5% 1/10W (EXCEPT E180EE/E380EE/E480EE)	
R605	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R606	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R607	1-216-089-91	RES, CHIP 47K 5% 1/10W	
R608	1-249-414-11	CARBON 560 5% 1/4W F	
R609	1-247-815-91	CARBON 220 5% 1/4W	
R610	1-247-815-91	CARBON 220 5% 1/4W	
R611	1-215-908-00	METAL OXIDE 33 5% 3W F	
R612	1-215-857-11	METAL OXIDE 10 5% 1W F	
R613	1-216-065-91	RES, CHIP 4.7K 5% 1/10W	
R614	1-216-065-91	RES, CHIP 4.7K 5% 1/10W	
R660	1-216-049-91	RES, CHIP 1K 5% 1/10W	
R661	1-216-295-91	SHORT 0	
R662	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R663	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R664	1-216-049-91	RES, CHIP 1K 5% 1/10W (E130/E177/E180/E230: AE, EY, UY, VP1, VP2/ E295UX/E380/E430: AE, VP/E477/E480/E530UX)	
R664	1-216-041-00	METAL CHIP 470 5% 1/10W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	

Ref. No.	Part No.	Description	Remark
R665	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R666	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R669	1-216-049-91	RES, CHIP 1K 5% 1/10W (E177/E180/E285B/E380/ E430B/E477/E480/E530B)	
R670	1-216-041-00	METAL CHIP 470 5% 1/10W	
R671	1-216-041-00	METAL CHIP 470 5% 1/10W	
R672	1-216-089-91	RES, CHIP 47K 5% 1/10W	
R673	1-216-089-91	RES, CHIP 47K 5% 1/10W	
R674	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R675	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R677	1-216-295-91	SHORT 0 (E130/E177/E180/E230: AE, EY, UY, VP1, VP2/ E295UX/E380/E430: AE, VP/E477/E480/E530UX)	
R677	1-216-041-00	METAL CHIP 470 5% 1/10W (E230CP/E285/E295: CP, VC1, VC2/ E430: B, CP, VC/E530B, CP, VC)	
R702	1-216-295-91	SHORT 0	
R711	1-212-893-00	FUSIBLE 330 5% 1/4W F	
R713	1-216-025-91	RES, CHIP 100 5% 1/10W	
R714	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R715	1-216-049-91	RES, CHIP 1K 5% 1/10W	
R716	1-216-049-91	RES, CHIP 1K 5% 1/10W	
R717	1-216-037-00	METAL CHIP 330 5% 1/10W	
R731	1-216-041-00	METAL CHIP 470 5% 1/10W (E285B/E430B/E530B)	
R733	1-216-041-00	METAL CHIP 470 5% 1/10W (E177/E180/E285B/E380/ E430B/E477/E480/E530B)	
R750	1-249-417-11	CARBON 1K 5% 1/4W F	
R752	1-216-049-91	RES, CHIP 1K 5% 1/10W	
R753	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R754	1-216-025-91	RES, CHIP 100 5% 1/10W	
R755	1-216-025-91	RES, CHIP 100 5% 1/10W	
R756	1-216-073-00	METAL CHIP 10K 5% 1/10W (EXCEPT E180EE/E380EE/E480EE)	
R757	1-216-049-91	RES, CHIP 1K 5% 1/10W (EXCEPT E180EE/E380EE/E480EE)	
R850	1-247-807-31	CARBON 100 5% 1/4W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R851	1-216-079-00	METAL CHIP 18K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R852	1-216-083-00	METAL CHIP 27K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R853	1-216-049-91	RES, CHIP 1K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R856	1-216-097-91	RES, CHIP 100K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R857	1-216-069-00	METAL CHIP 6.8K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	
R858	1-216-069-00	METAL CHIP 6.8K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R859	1-216-123-11	METAL CHIP 1.2M 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)		R997	1-216-073-00	METAL CHIP 10K 5% 1/10W (E285B/E430B/E530B)	
R860	1-216-123-11	METAL CHIP 1.2M 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)		R998	1-216-073-00	METAL CHIP 10K 5% 1/10W (E285B/E430B/E530B)	
R861	1-216-117-00	METAL CHIP 680K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)		R999	1-216-295-91	SHORT 0 (E285B/E430B/E530B)	
R862	1-216-057-00	METAL CHIP 2.2K 5% 1/10W (E230: VP1, VP2/E285/E295: UX, VC1, VC2/ E430: B, VC, VP/E530: B, UX, VC)		< SWITCH >			
R968	1-247-883-91	METAL CHIP 150K 5% 1/10W (E285B/E430B/E530B)		S100	1-771-155-11	SWITCH, ROTARY (CAM ENCODER)	
R969	1-216-069-00	METAL CHIP 6.8K 5% 1/10W (E285B/E430B/E530B)		S101	1-762-108-11	SWITCH, PUSH (1 KEY) (REC PRF)	
R970	1-216-085-00	METAL CHIP 33K 5% 1/10W (E285B/E430B/E530B)		S160	1-571-588-31	SWITCH, SLIDE (NTSC PB) (EXCEPT E130/E230)	
R971	1-216-085-00	METAL CHIP 33K 5% 1/10W (E285B/E430B/E530B)		S401	1-571-532-32	SWITCH, TACTIL (ON/STANDBY)	
R973	1-216-081-00	METAL CHIP 22K 5% 1/10W (E285B/E430B/E530B)		S402	1-571-532-32	SWITCH, TACTIL (EJECT)	
R974	1-216-081-00	METAL CHIP 22K 5% 1/10W (E285B/E430B/E530B)		S403	1-571-532-32	SWITCH, TACTIL (REC)	
R975	1-216-295-91	SHORT 0 (E285B/E430B/E530B)		S404	1-571-532-32	SWITCH, TACTIL (PAUSE)	
R976	1-216-059-00	METAL CHIP 2.7K 5% 1/10W (E285B/E430B/E530B)		S405	1-571-532-32	SWITCH, TACTIL (PROGRAM+)	
R977	1-216-089-91	RES, CHIP 47K 5% 1/10W (E285B/E430B/E530B)		S406	1-571-532-32	SWITCH, TACTIL (PROGRAM-)	
R978	1-216-071-00	METAL CHIP 8.2K 5% 1/10W (E285B/E430B/E530B)		S407	1-571-532-32	SWITCH, TACTIL (RF CHANNEL)	
R979	1-216-073-00	METAL CHIP 10K 5% 1/10W (E285B/E430B/E530B)		< TRANSFORMER >			
R980	1-216-097-91	RES, CHIP 100K 5% 1/10W (E285B/E430B/E530B)		T321	1-431-097-11	TRANSFORMER, BIAS OSCILLATION	
R981	1-216-083-00	METAL CHIP 27K 5% 1/10W (E285B/E430B/E530B)		< TUNER >			
R982	1-216-089-91	RES, CHIP 47K 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-404-11	TUNER, MOD/IF (BTF-3MC403) (E130/E230: AE, CP, VP1, VP2/ E285VC/E295: CP, VC1, VC2/ E430: AE, CP, VC, VP/E530: CP, VC)	
R983	1-216-065-91	RES, CHIP 4.7K 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-403-11	TUNER, MOD/IF (BTF-3MC444) (E285B/E430B/E530B)	
R985	1-216-041-00	METAL CHIP 470 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-360-12	TUNER, MOD/IF SOLID TYPE (E177/E180EG/E380EG/E477/E480EG)	
R986	1-216-089-91	RES, CHIP 47K 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-359-12	TUNER, MOD/IF SOLID TYPE (E180EE/E380EE/E480EE)	
R988	1-216-083-00	METAL CHIP 27K 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-402-11	TUNER, MOD/IF (BTF-3MU603) (E230UY/E295UX/E530UX)	
R989	1-216-049-91	RES, CHIP 1K 5% 1/10W (E285B/E430B/E530B)		TU700	1-693-401-11	TUNER, MOD/IF (BTF-3MC433) (230EY)	
R990	1-216-295-91	SHORT 0 (E285B/E430B/E530B)		< VIBRATOR >			
R993	1-216-071-00	METAL CHIP 8.2K 5% 1/10W (E285B/E430B/E530B)		X161	1-760-494-11	VIBRATOR, CRYSTAL (16MHz)	
R994	1-216-689-11	METAL CHIP 39K 0.5% 1/10W (E285B/E430B/E530B)		X162	1-579-463-11	VIBRATOR, CRYSTAL (32.768kHz)	
R995	1-216-073-00	METAL CHIP 10K 5% 1/10W (E285B/E430B/E530B)		X201	1-579-608-11	VIBRATOR, CRYSTAL (4.43MHz)	
R996	1-216-689-11	METAL CHIP 39K 0.5% 1/10W (E285B/E430B/E530B)		X660	1-577-289-11	VIBRATOR, CRYSTAL (17.734475MHz)	
				MISCELLANEOUS *****			
				6	1-762-844-21	SWITCH, ROTARY (E380/E530)	
				△ 55	1-777-854-21	CORD, POWER	
				704	1-500-144-11	HEAD, FE	
				769	1-759-183-11	DRUM ASSY, DZH-78A-R (E130/E177/E180/E230: AE, CP, VP2/ E285: B/E380)	
				769	1-759-522-11	DRUM ASSY, DZH-93A-R (E430/E477/E480/E530)	
				769	1-759-523-11	DRUM ASSY, DZH-92A-R (E230: EY, UY, VP1/E285: VC/E295)	
				M902	1-698-971-11	MOTOR, DC (CAPSTAN)	

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
M903	X-3947-577-1	MOTOR ASSY, CAM	
***** HARDWARE LIST *****			
#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2	
#2	7-682-547-04	SCREW +P 3X6	
#3	7-685-646-79	SCREW (3X8)	
#4	7-685-133-19	SCREW (DIA. 2.6) (IT3B)	

ACCESSORIES & PACKING MATERIALS

	1-475-565-11	COMMANDER, STANDARD (RMT-V220) (E130/E177/E180/E380: EE)	
	1-475-565-31	COMMANDER, STANDARD (RMT-V220B) (E480: EE)	
	1-475-566-11	COMMANDER, STANDARD (RMT-V221) (E230: AE, CP, VP1, VP2/E285: VC/E380: EG)	
	1-475-566-21	COMMANDER, STANDARD (RMT-V221A) (E230: EY, UY)	
	1-475-566-31	COMMANDER, STANDARD (RMT-V221B) (E285: B)	
	1-475-566-41	COMMANDER, STANDARD (RMT-V221C) (E430: B)	
	1-475-566-51	COMMANDER, STANDARD (RMT-V221D) (E477)	
	1-475-566-61	COMMANDER, STANDARD (RMT-V221E) (E430: AE, CP, VC, VP/E480: EG)	
	1-475-567-11	COMMANDER, STANDARD (RMT-V222) (E295: CP, VC1, VC2/E530: CP, VC)	
	1-475-567-21	COMMANDER, STANDARD (RMT-V222A) (E295: UX/E530: UX)	
	1-475-567-31	COMMANDER, STANDARD (RMT-V222B) (E530: B)	
△	1-696-593-11	CORD, CONNECTION (PAL) (ANT) 1.5m	
	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (E230: EY, UY/E295: UX/E530: UX)	
	3-709-128-01	COVER, BATTERY (for EXCEPT RMT-V220 /V220B) (E230/E285/E295/E380: EG/E430 /E477/E480: EG/E530)	
	3-709-322-01	COVER, BATTERY (for RMT-V220/V220B) (E130/E177/E180/E380: EE/E480: EE)	
	3-861-449-11	MANUAL, INSTRUCTION (ENGLISH) (E295: UX/E530: UX)	
	3-861-449-21	MANUAL, INSTRUCTION (FRENCH) (E295: VC1/E530: VC)	
	3-861-449-32	MANUAL, INSTRUCTION (FRENCH) (E530: B)	
	3-861-449-41	MANUAL, INSTRUCTION (SPANISH) (E295: CP/E530: CP)	
	3-861-449-51	MANUAL, INSTRUCTION (GERMAN) (E295: VC1/E530: VC)	
	3-861-449-61	MANUAL, INSTRUCTION (ITALIAN) (E295: CP, VC1/E530: CP, VC)	
	3-861-449-71	MANUAL, INSTRUCTION (DUTCH) (E295: VC1/E530: VC)	
	3-861-449-81	MANUAL, INSTRUCTION (PORTUGUESE) (E295: VC2)	
	3-861-451-11	MANUAL, INSTRUCTION (SWEDISH) (E295: VC2)	

Ref. No.	Part No.	Description	Remark
	3-861-451-21	MANUAL, INSTRUCTION (DANISH) (E295: VC2)	
	3-861-451-31	MANUAL, INSTRUCTION (FINNISH) (E295: VC2)	
	3-861-451-41	MANUAL, INSTRUCTION (GREEK) (E295: CP/E530: CP)	
	3-861-452-11	MANUAL, INSTRUCTION (ENGLISH) (E230: EY, UY)	
	3-861-452-21	MANUAL, INSTRUCTION (FRENCH) (E230: VP1/E285: VC/E430: VP)	
	3-861-452-32	MANUAL, INSTRUCTION (FRENCH) (E285: B/E430: B)	
	3-861-452-41	MANUAL, INSTRUCTION (SPANISH) (E230: CP/E430: CP)	
	3-861-452-51	MANUAL, INSTRUCTION (GERMAN) (E230: VP1/E285: VC/E430: VC, VP)	
	3-861-452-61	MANUAL, INSTRUCTION (ITALIAN) (E230: VP1/E285: VC/E430: AE, VP)	
	3-861-452-71	MANUAL, INSTRUCTION (DUTCH) (E230: VP1/E285: VC/E430: VP)	
	3-861-452-82	MANUAL, INSTRUCTION (PORTUGUESE) (E430: VC)	
	3-861-453-11	MANUAL, INSTRUCTION (SWEDISH) (E230: VP2)	
	3-861-453-21	MANUAL, INSTRUCTION (DANISH) (E230: VP2)	
	3-861-453-31	MANUAL, INSTRUCTION (FINNISH) (E230: VP2)	
	3-861-453-42	MANUAL, INSTRUCTION (GREEK) (E430: AE)	
	3-861-454-11	MANUAL, INSTRUCTION (SWEDISH) (E130: AE2)	
	3-861-454-21	MANUAL, INSTRUCTION (DANISH) (E130: AE2)	
	3-861-454-31	MANUAL, INSTRUCTION (FINNISH) (E130: AE2)	
	3-861-454-41	MANUAL, INSTRUCTION (GREEK) (E130: AE1)	
	3-861-455-12	MANUAL, INSTRUCTION (ENGLISH) (E380: EG/E477/E480: EG)	
	3-861-455-22	MANUAL, INSTRUCTION (CZECH) (E380: EG/E477/E480: EG)	
	3-861-455-32	MANUAL, INSTRUCTION (POLISH) (E380: EG/E477/E480: EG)	
	3-861-455-42	MANUAL, INSTRUCTION (HUNGARIAN) (E380: EG/E477/E480: EG)	
	3-861-456-12	MANUAL, INSTRUCTION (ENGLISH) (E177/E180: EG)	
	3-861-456-22	MANUAL, INSTRUCTION (CZECH) (E177/E180: EG)	
	3-861-456-32	MANUAL, INSTRUCTION (POLISH) (E177/E180: EG)	
	3-861-456-42	MANUAL, INSTRUCTION (HUNGARIAN) (E177/E180: EG)	
	3-861-457-12	MANUAL, INSTRUCTION (ENGLISH) (E180: EE/E380: EE/E480: EE)	
	3-861-457-22	MANUAL, INSTRUCTION (RUSSIAN) (E180: EE/E380: EE/E480: EE)	
	3-861-462-11	MANUAL, INSTRUCTION (FRENCH) (E130: AE1)	
	3-861-462-21	MANUAL, INSTRUCTION (SPANISH) (E130: AE2)	
	3-861-462-31	MANUAL, INSTRUCTION (GERMAN) (E130: AE1)	
	3-861-462-41	MANUAL, INSTRUCTION (ITALIAN) (E130: AE1)	
	3-861-462-51	MANUAL, INSTRUCTION (DUTCH) (E130: AE1)	
	3-861-462-61	MANUAL, INSTRUCTION (PORTUGUESE) (E130: AE2)	
	3-979-509-01	INDIVIDUAL CARTON (E530: CP, VC)	

*

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Replace only with part number specified.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
*	3-979-509-11	INDIVIDUAL CARTON (E530: UX)	
*	3-979-509-21	INDIVIDUAL CARTON (E530: B)	
*	3-979-509-31	INDIVIDUAL CARTON (E430: AE, CP, VC, VP)	
*	3-979-509-41	INDIVIDUAL CARTON (E430: B)	
*	3-979-509-51	INDIVIDUAL CARTON (E295: UX)	
*	3-979-509-61	INDIVIDUAL CARTON (E295: CP, VC1, VC2)	
*	3-979-510-01	CUSHION	
*	3-979-511-01	SPACER	
*	3-987-571-11	INDIVIDUAL CARTON (E230: EY, UY)	
*	3-987-571-21	INDIVIDUAL CARTON (E130)	
*	3-987-571-31	INDIVIDUAL CARTON (E285: VC)	
*	3-987-571-41	INDIVIDUAL CARTON (E285: B)	
*	3-987-572-01	INDIVIDUAL CARTON (E480: EG)	
*	3-987-572-11	INDIVIDUAL CARTON (E480: EE)	
*	3-987-572-21	INDIVIDUAL CARTON (E477)	
*	3-987-572-31	INDIVIDUAL CARTON (E380: EG)	
*	3-987-572-41	INDIVIDUAL CARTON (E380: EE)	
*	3-987-572-51	INDIVIDUAL CARTON (E180: EG)	
*	3-987-572-61	INDIVIDUAL CARTON (E180: EE)	
*	3-987-572-71	INDIVIDUAL CARTON (E177)	

